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Difference in GPA by Major and Type of Sport in Division II Student Athletes

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Difference in GPA by Major and Type of Sport in Division II Student Athletes

A THESIS

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Difference of GPA by Major and Type of Sport in Division II Student Athletes

Abstract

It has been suggested that the demand of university athletics can hinder academic success. Furthermore major selection may be dependent on ease of eligibility and lead to academic clustering. The purpose of this study was to determine how student athlete's sport and major affect their grade point average (GPA) at the University of Central Oklahoma (UCO). There has yet to be a study relating individual sports team's major selection and GPA. This study used unidentifiable academic data from Fall 2005 to Fall 2012 of UCO student athletes. This study included 743 student athletes from seven major sports and all eight academic colleges.
A sample size of 743 student athletes from the academic Fall 2005 to Spring 2012 was used for the study. For all of the differences, one way ANOVAs were conducted with a p value of 0.05. Since there was no homogeneity found between any of the groups, all post hoc tests were conducted with Games Howell

The results demonstrated in GPA to sport there was a significant difference in males and females (p = 0.01). The male sports (football, baseball and wrestling) had a significantly different GPA compared to the female sports (rowing, basketball, softball and track). Female sports had a higher GPA averaging 2.94 (SD = 0.07), compared to males with a mean GPA of 2.27 (SD = 0.8). There was a significant difference between the College of Education (CEPS) to Math and Science (CMS), $F(7, 742) = 9.47$, p = 0.024, and Undeclared, $F(7, 742) = 9.47$, p = 0.01. Of the ten most frequent majors General Studies, $F(4, 151) = 10.035$, p = 0.01, Industrial Safety, $F(2, 52) = 6.451$, p = 0.01, and Undeclared, $F(5, 43) = 2.864$, p = 0.01, major had a significant difference between the sports. Academic clustering occurred with 48% of student athletes choosing majors in CEPS.

Overall there was a significant difference in GPA by team and major. Female team reported higher GPAs than males in many of the majors. The differences in GPA were best demonstrated in the Undeclared major. Females reported a higher GPA and less roster years in this major. Females may be declaring a major earlier than male student athletes, which dictates more academic success. This researcher implies that if student athletes declare a major earlier, they may adapt to the strains of academic life earlier. This acclamation will allow for higher GPA and more roster years, which are both the implications of the APR.

Further research on academic clustering of the sports during this time period is needed. More research about change in college enrollment of student athletes and demographics is warranted to better describe academic clustering at UCO. Other demographic factors such as race and academic preparation may also aid in demonstrating the difference in GPA by major and sport.

Introduction

Significance of Study

The purpose of this study was to demonstrate how student athlete's sport and major relate to their grade point average (GPA) at the University of Central Oklahoma. There has yet to be a study relating individual sports team's division of majors and their academic success. It has been thought that the demand of competitive athletics in college can be detrimental to the academic success of the student athlete (Bauer & Liang, 2003). Even more so with some teams allowing up to 20 hours of practice time during the week (Christy, Selfriend, & Pastore, 2008) there is little time to focus on academics. This research will describe differences in GPA compared to a student athlete's sport and major.

Brief Review of Literature

In college athletics there are two main associations, the National Association of Institutional Athletics (NAIA) and the National Collegiate Athletic Association (NCAA). The NCAA includes the majority of collegiate athletic teams and governs these athletic programs. The NCAA designates three divisions of competition. Division I and Division II are able to give scholarships to athletes, while Division III cannot. Division I schools are mainly larger schools and Division II are smaller schools (Pierce, 2007), but both can require up to 20 hours from the athletes a week. Division I and Division II are the most competitive divisions in collegiate sports (Fountain & Finley, 2009).

Though athletics does consume much of a student athlete's time during their college years, the academic focus is still important for continued success after graduation. Few athletes play sports professionally after college (National Collegiate Athletic Association, 2011). In 2011,

the NCAA reported the amount of NCAA student athletes playing professionally. This report included the six main professional sports including men's hockey, women's basketball, men's basketball, football, baseball and men's soccer. The NCAA found that 2.95% of college student athletes are drafted into the professional leagues. Men's hockey had the highest with 11.6%, and the other five sports averaged 1.22% of college student athletes playing professionally (National Collegiate Athletic Association, 2011). There is a very small chance a college student athlete will be paid to play sports, therefore their degree and academic success is very important.

To reinforce the importance of GPA and completing a degree an Academic Progress Rate (APR) was established in 2003 by the National Collegiate Athletic Association and enhanced in 2005. The APR states that student athletes must not only have a certain GPA to be eligible for competition but also be making progress towards completing a degree. The later implications of college GPA are job placement and placement into graduate programs (Christy, Selfriend, & Pastore, 2008; Pendergrass, Hansen, Neuman, & Nutter, 2003). The importance of academics is placed on student athletes so they succeed in completing a college degree and continue to prosper after graduation.

The APR is addressed through graduation rates per year for student athletes. More specifically the APR evaluates the rates of 4 year graduation and 6 year graduation for student athletes. Since UCO is a state institution, the university is evaluated on its graduation rate for both 4 year and 6 years (University of Central Oklahoma, 2012). For that reason adherence of student athletes to the APR effects the athletic department and the federal funding awarded to the university.

Due to the APR and thus the change in athletic eligibility, the questions have been raised about student athlete major selection. There are competing notions that student athletes have

begun choosing certain majors to remain eligible or if student athletes in general have a similar interest in major. In previous research, student athletes tend to have a different trend in majors than the general college population (Fountain & Finley, 2009; Pendergrass, Hansen, Neuman, & Nutter, 2003; Schneider, Ross & Fisher, 2010). This clustering of majors can be due to the similar interests of athletes and therefore their similar career choices after college. The grouping of majors in student athletes has been hypothesized to be brought on since some majors are the path of least resistance and allow athletes to remain eligible (Schneider, Ross, & Fisher, 2010).

This academic trend can be a position for UCO to aid student athletes. In addressing different sports and majors, the success of student athletes can be addressed by two different independent variables. Two changes that can be made for a troublesome major is offering more tutoring for student athletes or offering class times that complement athlete schedules (Callahan, 2008; Kane, Lee & Holleran, 2008). As well if a certain team has a lower GPA than other teams, an adjustment can be made to allow the team to increase performance. An example of this team adjustment is the coach and administrators can create options for study hours and academic preparation seminars to help the student athletes acquire the skills and time management to excel in class. Studies to address academic issues have been performed in many Division I schools, that have instituted similar interventions (Kane, Lee & Holleran, 2008; Scott et. al, 2008). There appears to be no similar research performed in a Division II school.

Hypothesis

The author anticipated different demographics influencing the GPA of athletes. Female students tend to have a higher GPA than male athletes (Hardwick-Day, 2008; Harrison et. al, 2009; Lapchick, 2001). With this information the author hypothesized that the female athletes

would have a higher GPA than the male athletes. There has been a 6.6% increase in general male enrollment at University of Central Oklahoma over the past 5 years, and therefore may be reflected in the demographic of the student athletes (University of Central Oklahoma, 2012). Division II student athletes have been investigated by gender, showing that Division II males receiving scholarships tend to have a lower academic profile than Division III student athletes (Hardwick-Day, 2008). Furthermore minority student athletes have been reported to have lower GPAs than white student athletes (Kane, Leo & Holleran, 2008; Killeya, 2001). The clustering of athletes due to their race has been noted that African Americans tend to cluster into a similar major (Fountain & Finley, 2009; Sanders & Hilderbrand, 2010). The University of Central Oklahoma (2012) has had an 11.7% increase in African American enrollment in the past 5 years, therefore this may be a factor in determining academic success.

As previously stated, prior research has demonstrated that student athletes do cluster into majors (Schneider, Ross, & Fisher, 2010). The common academic path is anticipated in many social groups, including college athletics. This academic grouping of student athletes is anticipated in the UCO sample. A secondary focus of this research was investigation of major clustering in athletic teams through the differences in GPA.

As previously stated, the majority of college athletes do not play sports professionally; therefore most athletes' college major will dictate their career pursuit after college. If athletes begin choosing majors complement their athletic playing, they may not be able to pursue their ideal career upon graduation. This research described student athlete's team and major selection difference to the student athlete's GPA. Since there has yet to be research identifying both independent variables of team and major, this research aimed to find the difference between such variables.

Limitations

Accordingly, since there seems to be no research, a limitation of the current study is there is no previous data to compare to. A limitation of the study is that the research compiled must be from 2005 to 2012. In that the data of interest is that data after the in-statement of the APR in 2005, and any data before 2005 is not directly relevant to the research. This study will focus on the two independent variables to find a difference and possible differences found can then be further pursued and addressed. A limitation is the amount of student athletes enrolled at UCO from 2005-2011, though there were 14 teams, only seven teams were a part of this study. In order to obtain the necessary de-identified information only seven teams with large enough roster size, had their academic records release. The data on these seven teams investigated including many different aspects. These variables included sport, roster years, first term attended, admit status, academic status, per semester GPA, per semester major, graduated major (if applicable), graduate GPA (if applicable) and overall GPA. With these aspects there will be much information on these student athletes to draw conclusions. As well of the seven teams chosen, three teams were male, and four were female. This creates an inequality of teams but the amount of female and male athletes, though as a university it will be comparable due to NCAA Title IX Regulations (Office of Civil Rights, 1979). Title IX states universities must operate under an equivocal number of expenditures and opportunities for male and female student athletes (National Collegiate Athletic Association, 2011).

Transfer students were addressed on their UCO academic information. A limitation is the information provided did not dictate which semesters the student athlete was named to the roster. However many student athletes roster years were very similar to their academic years, which

reduces the amount of non-competitive season GPAs as a part of this research (Fountain & Finley, 2011).

Delimitations

Delimitations of the study included the time frame created, which as between Fall 2005 to Spring 2012. Academic data from this time period was used due to the in-statement of the APR in 2005, and the length is used to demonstrate the longer term effects of the APR. As well Division II student athletes were used due to the lack of research in this particular research in relation to GPA. As well this data would be recorded and maintained by the athletic department due to scholarship possibilities. Furthermore all levels of academic status were used, therefore the freshmen average GPAs were used as well as those who have graduated. This was used to better describe the entire student athlete population. To supplement the current research and better describe the differences in academics throughout the years, the academic status was addressed.

Literature Review

The research regarding student athletes has mainly been guided toward predicting success in student athletes and reporting the changes in academic trends. The changes in academic standards, like the APR, have been investigated and their implications on the population and trends of the student athletes and administrators. This information is important to the study since these trends do include the major selected and the academic success reported in GPA of the student athlete.

As well research has been conducted on to the different traits of successful student athletes. If properly utilized and identified, these traits may prevent any academic failures of the athletes. For that reason any indicators of possible at risk athletes can be identified and receive aid or extra assistance academically in order for them to succeed. These factors include their demographic information and their major.

Another characteristic of academic success is their major, hence the trend in majors has been reported and analyzed. Major selection has been shown as an indirect academic success factor (Fountain & Finley, 2009). As well this is a secondary emphasis of the paper, to see if the academic clustering is related to the GPA of student athletes. Overall the changes in the APR have dictated the success of the student athlete, and are created to ensure that the student athlete can excel during and after their college career.

Academic Progress Rate

To begin, the National Collegiate Athletic Association (NCAA) created a report in 2011 that estimated the percent of NCAA athletes to professional sports. The report utilized the six main professional sports of men's ice hockey, football, men's basketball, women's basketball,

football and men's soccer. NCAA senior student athletes were defined by their eligibility status. Senior student athletes are the most likely to be drafted into these professional sports and fill the open roster positions compared to other classes and athletes from other countries. The NCAA estimated the amount of open roster positions through data obtained from the respective professional leagues. This data and the amount of NCAA senior student athletes were used to determine how many NCAA Student athletes were drafted into the professional sport. The percent of NCAA senior student athletes to open roster positions is 2.95%. Men's Ice hockey reported the highest percentage of 11.6%, and was 10% higher than all of the other sports reported. Excluding the men's ice hockey percentage, the five sports average a 1.22% of NCAA athletes to professional sports. This low percentage reinforces the importance of student athletes to academically succeed and complete a college degree.

LaForge and Hodge (2011) provided a detailed history as to the academic standards for student athletes. This study described the changes made by the implication of the Federal Graduation rate (FGR), Graduation Success Rate (GSR) and APR to NCAA institutions academic eligibility. The study describes FGR, GSR and APR. In 1983 the NCAA passed a notion that student athletes must adhere to certain guidelines. In 1993, the NCAA deemed it significant to compare student athlete graduation rates to that of other students with the FGR and the GSR. The APR was created in 2003 to relate the graduation and academic success in a more timely manner. The APR increased its graduation progress standards in 2005. The change was meant to reflect a team’s eligibility and retention of athletes. Therefore athletes who left school or discontinued athletics in good academic standing would count toward the team. Nevertheless athletes who left the team with poor academic standing and ineligible would also count against the program. LaForge and Hodge (2011) suggest that this implication ensures that athletes who

are interested in playing professional sports must still remain academically eligible before they enter their respective draft. This also creates incentive to keep many athletes academically eligible since the APR is a percentage of academically eligible athletes to the total number enrolled each semester. This concept is crucial to incoming athletes and their GPA, creating an academic emphasis in their first semesters. Overall LaForge and Hodge (2011) describe the APR that aids a timely graduation and consistent academic focus, by the athletes become more accountable for their academics throughout their collegiate career.

Though the APR has affected athletes, the repercussions of these standards have affected more than the student population. As described by Christy, Selfried, and Pastore (2008), the APR and academic success of student athletes have affected administrators and faculty that interact with the students. The APR is an academic reform based on the academic advancement and completion. The APR's evaluation each semester reaffirms that importance of continual effort of the athletic team. The change in APR incurred a major shift in Division I athletics. As an example the Division I graduation for sophomores at the end of the academic year increased from 25% to 40% completion. In 2007, two years after the in-statement of the APR, Christy, Selfried, and Pastore (2008) surveyed administrators affected at major Division I universities and sought their opinion on the success of the APR. The participants were a part of four categories: athletic directors, faculty athletic representatives, senior women administrators and head coaches. This study sought to keep the anonymity of the participants and classified them in the four categories. The survey included demographic data and simply one open-ended question asking what the impact of the APR has been on athletics in their scope. Sixty four percent of the respondents believed it had a positive impact on intercollegiate athletics. The overwhelming theme was that the APR caused coaches and administrators to re-evaluate athletes recruited and

their influence on the team academically. The majority of head coaches expressed concern that the APR will deter athletes from certain majors. This qualitative research showed the concerns of the coaches of Division I universities. It can be implied that with the similarities of offering scholarships, the same administrator categories Division II universities may have the same views. This research gave insight as to the views of other universities across the country about APR.

Factors in Student Athlete Academic Success

As mentioned the recruiting process has changed due to the APR. With that there are many diagnostic factors that have been studied in order to predict their collegiate GPA. In predicting success for student athletes Bauman and Henschen (1983) utilized longitudinal study to determine what factors predicted success in athletes. The authors aimed to predict college GPA from high school GPA, ACT scores and a predicted GPA formula. Therefore the authors compared ACT, high school GPA, a predicted GPA (PGPA) equation product compared to actual GPA. A secondary focus was the validity of the predicted GPA formula. Bauman and Henschen (1983) used half of the population to create sample equation using just ACT and GPA, then used the other portion to confirm. The ACT and high school GPA equation is best for GPA. In relation to demographics, the ACT/ high school GPA equation was a better predictor for caucasian students and high school GPA best predictor for non-caucasian student athletes. In review, the article established that student athlete GPA is a historic and valuable academic success assessment value.

The influences of first year GPA of student athletes have been thoroughly examined since Bauman and Henschen's first study. Johnson, Wessel and Pierce (2009) conducted a study at a Division I university utilizing data from 2005-2008. This data was therefore affected by the in-

statement of the APR. The factors that were investigated included demographics, standard academic measures and athletics aspects in relation to first year GPA of student athletes. The demographic data included race, gender and distance from home. The standard academic measures included overall high school GPA, high school class size and rank in high school. The athletic factors investigated were sport, coaching change during first year, win percentage of team and amount of playing time. The research found that the female student athletes outperformed males on the majority of traditional academic factors (Johnson, Wessel & Pierce, 2009). Caucasian student athletes outperformed the other races in the traditional academic factors as well. This study also focused on the major of the first student athlete and grouped each participant as undecided or decided. The first year student athlete who came in undecided had a lower first year GPA, but had similar graduation rates to those who had a declared major in their first year. The first year major and graduation progress reaffirms the importance of investigating the academic majors influence on the student athlete's academic success.

In comparing academic success, the female student athletes are not put at an advantage through funding or assistance. In 1979, the Office of Civil Rights reviewed the Title IX Policy of the 1972 Education Amendments. The application of this policy specifically applies to the implications of this amendment on the collegiate athletic system. The Office of Civil Rights describes the policy as giving equal rights, funds and attention to female athletes as well as male athletes. This document assessed the three main areas that must be equal of distribution of financial assistance, program assistance, and complementing the interests of the student-athletes. This report was created in response to the differing interpretations of the original document of 1972. The information in this report confirms that the participants in this study will have equal

accommodations and treatment. Therefore the factor of discrimination based upon sex can not be a limiting factor in conducting this research.

In comparing academic success, the female student athletes are not put at an advantage through funding or assistance (Office of Civil Rights, 1979), though the funding of an athletic program can help student athletes. In 2008, Hardwick-Day investigated the impact of athletic scholarships on the Division II profile. Hardwick-Day (2008) compared nine Division II and nine Division III universities in respect to the differences in enrollment. Hardwick-Day compared student athletes and non-student athletes in relation to their academic profile and academic success. The authors found that the offering female athletic scholarships greatly increased the academic profile of the universities. As well Division II universities that offer athletic scholarships had higher male enrollment, 57%, compared to Division III universities who do not offer athletic scholarships with 42% male. The study created a scale of academic rank by standardized test scores, college GPA and academic credentials. The research then compared scholarship recipients of non-athletic (Division III) and athletic (Division II) to their academic rank. When comparing each of the five groups created between Division III (non-athletic) and Division II (athletic) the academic ranks were similar. In relation to gender, Division II female recipients trended to the higher academic rankings than Division III females, with 3% more of the higher academic profile females receiving athletic scholarships. Division II males had a significantly lower academic profile than Division III males. Implications are that Division II males used their athletic ability to help aid their admission into college (Hardwick-Day, 2008). Overall it was determined that offering athletic scholarships decreased the gender difference in student population and increased the academic profile of the Division II universities (Hardwick-Day, 2008).

Though females have been identified as outperforming males, being identified as a student-athlete has a different relationship to academic success. Harrison et al., (2009) sought to investigate the relationship between being identified as an athlete affected test scores on differing levels of tests of the different sexes. The study found that females did poorly on moderate tests when identified as student athletes, though overall tested higher than males. While males did better on the harder tests when identified athletically. Harrison et al., (2009) hypothesizes this difference is that different motivational processes must be used for female and male student athletes, such as identifying oneself to professors. Female student athletes tend to not identify themselves to professors, while male student athletes do. This motivation may play a part as a difference is found between the sexes in their GPAs in the same major.

In continuing the literature on gender differences in GPA, a follow up study to the illustrations of the APR on student athletes on a high performing level. In 2011, a follow up study was conducted about the APR rates of the teams that had made the 2011 men's and women's NCAA Division I basketball tournament. Lapchick (2011) investigated the same factors that drew the NCAA to change to APR in 2005 and see if there is a current trend in graduation and academic success in these teams that may ensue further change for NCAA Academic standards. Lapchick investigated APR, race in the men's and women's Graduation Success Rates (GSR) in the 64 teams at the NCAA Division I basketball tournament. The women's teams had a significantly higher GSR with 100% of the teams graduating 50% student athletes in 6 years, while 75% of men's teams graduated 50% of their athletes in a timely manner. The correlation of GSR between African American and white athletes by gender was investigated, with females having less of a difference in their GSR between the races. It can be hypothesized that these high performing teams may have student athletes enter the draft before

graduation, however there are very few athletes that may leave college for the draft, and this is a measure of multiple teams trends. Overall, Lapchick (2011) noted that the women's teams performed better on all fronts in regards to GSR, and had a smaller distance between races. This can be expected due to their traditionally higher academic success. Furthermore there is less of a gap in GSR between the two genders.

Other than gender, race has traditionally played a difference in scholarly achievement. Killeya (2001) sought to identify important non-cognitive factors of predicting academic performance of minority and majority student athletes. Killeya (2001) surveyed Division I football players from multiple schools and collected information by a demographic survey and non-cognitive survey. Academic demands impact African American adjustment to college the most significantly. Accordingly European athletes adjusted better to college lifestyle than African American athletes, and had higher GPAs. The research reaffirmed that ACT scores are not related to African American academic success, as found in previous studies (Bauman & Henschen, 1983). The results noted that athletes in this survey with a higher GPA studied outside of the athletic sphere. Therefore Killeya (2001) recommended that when making academic changes to emphasize the "student" of student athlete.

The racial disparities in GPA have had implications further than the sport's APR. As mentioned previously, the administrators and faculty that take part in these studies (Christy, Selfried, & Pastore, 2008) also are influenced by race and student athlete persona. Cormeaux (2010) surveyed 464 faculty at a southern Division I university about their opinions regarding student athletes in relation to race. Cormeaux investigated the faculty perception of black and white student athlete accomplishments. The study gave a photo and a description of the student athlete to the faculty and asked them to complete survey about their feelings regarding the

success of this student athlete. The photos included males and female, black and white. The faculty reported more supportive towards all female student athletes in handling athletics and academics. Following along with their responses, they all acknowledged race in their responses. They were less sympathetic to black student athletes and gave the least sympathy for white male student athletes. Each participant acknowledged race in some respect throughout their description. Faculty view on black student athletes accomplishments were less favorable than white. The conclusion was black student athletes had academic success given to them, while white student athlete academic success was expected but still earned. This is an important to study to acknowledge the faculty do have different perceptions of the study athletes, and this study was conducted in a similar region to the University of Central Oklahoma.

As well there are other socio-economical factors that affect the experience of student athletes. As told by Coakley (2007), there are many arguments for and against sports in the academic arena. Involvement in athletics can allow for students to be more involved in school activities, foster fitness and increase parental, alumni and community support for the university. Sports may also distract from academics, perpetuate conformity and deprive programs of resources. As for the relation of Division II athletes, Coakley (2007) reports more students have found identity in their demographic than their sport participation. This may be seen as a determining factor in major selection and determining their academic success as defined by GPA. Additionally the Division II profile is unique since many student athletes who receive Division II scholarships have a lower academic profile entering the university, their under qualification is a hindering factor in their education. Therefore achieving minimum standards is a large academic goal coming into the university setting. In this case, the student athletes use their athletic performance to obtain higher academics. As a solution Coakley (2007) also reports that the

characteristics of successful student athletes include those with past experiences reaffirming importance of education, social network support and perceived access to career opportunities following graduation. These factors may be used to help guide universities to create academic success.

Implications of the Academic Progress Rate

Many factors have been explored in relation to the GPA of the student athlete. The student athlete's excellence not only affects the athletic program but the changes that can be made by a university. In 2008, the University of Minnesota conducted an investigation to the areas of student-athlete academics that could be improved (Kane, Leo & Holleran, 2008). The authors utilized many different academic and athletic factors to determine their conclusion. Overall they determined that female student athletes have a better APR. Male sports of football and basketball had the lowest APR. The Kane, Holleran and Lee recommend many aspects for the future in order to enhance academics. The main focus is remaining eligible through graduation completion, which was the most compromised factor of the athletic program's APRs. Suggestions to improve the APR of the university were to create a summer bridge program, increase the amount of classes that fit into student athlete schedule, and integrate athletics into the faculty community. This investigation greatly resembles the research that is described in this paper and affirms the implications of APR on student athletes. The current paper also provides recommendations that could be used by UCO for APR improvement.

An article in response to the findings of Kane, Holleran and Lee (2008) dictates the aspects of APR and academics. In response to the APR of being affected by incoming athletes, Callahan (2008) suggested using the 1st semester declared major as a point of success.

Furthermore, the use of longitudinal data was sufficient but did not investigate trends of success. These trends can help predict success of current and future student athletes and their path to academic excellence. Another aspect that Callahan (2008) criticized is the lack of descriptive information related to the GPA of the athlete. Callahan (2008) states that the fact that the University of Minnesota is a state school may be an aspect of investigation if out of state student athletes have a different GPA. All of these suggestions are taken into account in planning the descriptive information acquired in this study, for example as the first semester major declared will be collected.

With the suggestions given, the time demands of student athletes become an inevitable factor. Student athletes began to reconsider the amount of classes and timing of their graduation progress (Scott et al., 2008). In a cross division study, the student athlete in and out of season GPA was examined in its relationship to academic preparation of the athlete before college or athletic demands. Scott et al., (2008) compared in and out of season, credit hours and sex in relation to semester GPA across all NCAA Divisions of sport. There was a large credit drop off between fall season athletes of football and women's volleyball. Women's volleyball and men's lacrosse had the largest discrepancy between in and out of season semester GPA. When the study was applied to Division II, the study took in considerations of winter - spring sport, multisport athletes were excluded. The study suggested in the future to account for academic background but was limited due to lack of information. This study addresses the possible differences in GPA between student athletes depending on their season of competition.

Another way student athletes have complied with the APR is choosing a major that may help them remain eligible. This becomes increasingly important in sports, such as football, that may travel for the majority of their in season semester. Schneider, Ross, and Fisher (2010)

sought to identify trends in academic majors of football student athletes at a Division I school. After acquiring media guides and rosters of the major sports, the authors determined that athletes tend to have a different trend in majors than the general college population. There were no direct conclusions to be brought, though the authors hypothesized the grouping of majors in student athletes was due to a the path of least resistance and allow athletes to remain eligible.The secondary focus is to investigate if there is a major clustering through the teams and GPA.

Academic Clustering

In regards to multiple sports, Sanders and Hildebrand (2010) examined athletic clustering at a Division I university. Three factors were explored, the time of the major selection, pattern of clustering and the later implications of clustering. These were explored by comparing the differences in semester declared major, demographic information, and income projection. Sanders and Hildebrand found that more student athletes clustered toward this major later in their academic career, and closer to the deadline to select major for NCAA eligibility. The major the student athletes patterned toward was social sciences, and of the social science major 64% of the students were African American. The short term projected income and long term projected income were similar between non-student athletes major selection and student athletes major selection. This study confirms the differences in major, though the income short and long term will be similar.

Pendergrass, Hansen, Neuman, and Nutter (2003) examined the major selection of student athletes to their skills and interests to determine if there was a difference to the general population. The authors asked participants to take the Campbell Interests and Skill Survey (CISS) and compared their scores to their major selection. The group was then compared

between student athletes and non-student athletes. The sample included 81 male students from a midwestern Division I university. The control was 55 non student athletes at the same school with similar demographics. The comparison showed that more non-athletes were deemed a “high” compatibility with their major, though the margin was only by 5% and was explained by the sample sizes not being exactly equal. The authors stated that there was a difference, though not significant. This article confirms the investigation needed into the choice of major in student athletes.

Academic clustering has also been investigated in relation to factors such as race. This aspect has previously been established as a possible factor in GPA (Christy, Selfried, & Pastore, 2008; Killeya, 2001). Fountain and Finley (2009) investigated the relationship between academic clustering in football programs by race. The authors took a sample of 394 Division I football players from 12 different schools and classified them by major and race. The authors defined clustering as having more than 25% of a group (race or team) in a certain major. The results showed that white players were less clustered than other races. Minority players tended to cluster more, such that the research found that in the six schools a total of seventy five percent minority players were in one of two majors. Fountain and Finley (2009) discovered that clustering did occur in the sample and that race played a significant role. This research reinforces the importance of determining the clustering of athletes to a certain major. Fountain and Finley hypothesized it may relate to the recent change in the APR.

In a follow up, Fountain and Finley (2011) performed a similar investigation to the clustering of academic majors in Division I football. The authors investigated if the change in major was due to the in-statement of APR and investigated the academic clustering of a Division I football program over the ten year period of 2000-2009. This period included the instatement of

APR in 2003 and the changes made in 2005. The results suggested that the student athletes began to cluster into a certain major and that the players that entered the National Football League Draft from this school had that certain major. As well undecided majors eventually selected the chosen major. The chosen major was apparel, housing and resource management. Sixty two percent of minority student athletes chose this major, while the thirty seven percent white population did chose this major. This study confirmed that athletes clustered towards a major and race was an influence.

Consequently there are student athletes that choose the path of most resistance through a difficult major (Bauer & Liang, 2003). A comparison was conducted investigating the multiple factors that lead to major selection and retention in student athletes (Pierce, 2007). A survey was conducted of engineering student athletes in a Division I university and their experience having a traditionally demanding major and competing in collegiate athletics. The survey included open ended questions and questions that diagnosed different characteristics of the student athletes. After taking the survey it was analyzed on comparing answers to the survey to the GPA of the student athletes. The five main success factors that described student athletes were time management, organization, problem solving, concentration and desire to succeed. Accordingly, these results can aid in recommending solutions if there is a significant difference in major selection and GPA.

In conclusion there is much research about the demographics that relate to the student athlete academic success assessed as GPA. There has yet to be a study relating team and major to GPA in Division II student athletes. The purpose of this study was to investigate the differences in student athlete’s sport and major to their grade point average (GPA) at the University of Central Oklahoma.

Methodology

Participants

The data used for this non-experimental design was obtained from the Office of Student Records and the Athletic Department of the University of Central Oklahoma (UCO). This data was collected in the fall of 2012. To address trends in major and grade point average (GPA), the authors obtained information after the in-statement of academic progress rate (APR) in the 2004-2005 academic year (Christy, Selfriend, & Pastore, 2008). The establishment of this policy will have affected any data before and including the summer semester of 2005 (Christy, Selfriend, & Pastore, 2008; Kane, Leo, & Holleran, 2008). The data collected was from the Fall 2005 semester until the Spring 2012 semester. The information collected was in relation to UCO, therefore their transfer GPA or major did not affect their standing.

A roster of names for each athletic team was collected through the office of research and Historic Records of the Athletic Department. The student athlete's information requested for the time range of fall semester of 2005 to spring of 2012. Demographic data was obtained to create a profile of the academic setting of student athletes of UCO.

There are four main aspects of information that will be collected: GPA per semester, graduation GPA, major declared and demographics. Two additional aspects included the admit status of transfer or start at UCO. The other aspect was academic status of the athlete included graduated, in school, left while eligible, left while ineligible and academically suspended. Finally the demographic data of sex and athletic team was obtained.

Eligibility in Division II is related to their semesters of competition, due to the nature of Division II athletics having many transfers. In this study their eligibility were shown with the semesters, such that Division II athletes have 10 semesters to complete 4 seasons/years of

athletics (National Collegiate Athletic Association, 2012). This was evaluated by roster years, with a minimum of one year to a maximum of five. The entire academic year of fall to summer was denoted as a roster year. The majors will be categorized by their college of study and by prominent clustering. The colleges include College of Fine Arts and Design, College of Business, College of Education and Professional Studies, College of Liberal Arts, College of Math and Science, Academy of Music, Institute of Forensic Science and Undeclared. Undeclared studies will be used due to the amount of transfer students (University of Central Oklahoma, 2012). The ten highest selected majors were analyzed after college clustering was established. Table 1 and Table 2 display the information collected as an example.

Table 1.

Example of Student Athlete 001 Academic Information

Athlete	Sport	First Term	Admit Status	Academic Status	Roster Years
001	Rowing	Fall 2006	Transfer	Graduated	4

Table 2.

Example of Student Athlete 001 Academic Progress by Semester

Year	2006		2007		2008		2009		Overall
Semester	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Overall
Major	Kins	Kins	Kins	Kins	Kins	Kins	Kins	Kins	Kins
College	CEPS	CEPS	CEPS	CEPS	CEPS	CEPS	CEPS	CEPS	CEPS
GPA	3.0	3.9	3.1	3.0	3.4	3.5	3.6	4.0	3.43

Instrumentation

The data obtained only included teams that had over 28 athletes on their roster during the allotted time. Therefore there were only seven teams eligible for this research: including men's football, men's baseball, men's wrestling, women's rowing, women's basketball, women's softball and women's track. There were very few student athletes in the College of Fine Arts, Academy of Music and Institute of Forensic Science, therefore few conclusions were drawn. The effect size of 0.5 was the aim of this research. Since there has yet to be a study the sample size needed for this research have been calculated from a similar research article (Fountain & Finley, 2009) that examined the different majors of differing groups.

Procedures

The data was stored using the SPSS information management system. The student athletes were entered in as a coded system and their names were not be used in order to ensure the confidence of this personal information. First term at UCO, admit status, academic status, final majors, final college, overall GPA and roster years were be collected. Demographic information including gender and transfer status were entered as well.

Statistical Analysis

The semester GPA, overall GPA, roster years and athletic team components were explored. With the data given, one-way ANOVAs were conducted to determine differences. The ANOVAs were run with a significance level below 0.05. Since there was no homogeneity of variances in any of the statistical tests, the post hoc tests conducted in the experiment were

Games-Howell to account for the violation of this assumption. An independent *t*-test was conducted when examining the difference between males and females.

Results

Descriptive Data

A sample size of 743 student athletes from the academic semesters Fall 2005 to Spring 2012 was used for the study. Data was provided by the Office of Institutional Research at UCO. The data included descriptive data of sex and admit status. The academic data included final grade point average (GPA), as defined by graduated GPA or average GPA while in school. Years named to roster were also included. The final major, as defined by graduate major or last major chosen at UCO was provided. Through the chosen major of the student athlete the academic college at UCO was determined.

Overall there was a greater number of male student athletes (n = 545) compared to females (n = 178). This large discrepancy was primarily due to the disproportionate number of athletes in the sport of football. Women's rowing and women's track were added during the time period of 2005 - 2011, therefore data from these two sports were slightly skewed in relation to first term, roster years and academic status.

For all of the differences, one-way ANOVAs were conducted with an alpha value of 0.05. Sample size is displayed in Table 3 below. Since there was no homogeneity of variance found between any of the groups, all post hoc tests were conducted with Games Howell.

GPA by Sport

The differences between sport for GPA when including all levels of academic status were explored using a one-way ANOVA. The sports included for analysis were football, baseball, wrestling, women's rowing, women's softball, women's basketball, women's track and field and women's softball. GPA was defined as the athletic's while enrolled average GPA for their time

at the University of Central Oklahoma. The differences between sport for GPA were significant, $F(6, 736) = 21.41$, $p = 0.001$.

Table 3.

GPA by Sport

Sport	N	Mean	SD
Men's Football	313	2.20	0.81
Men's Baseball	131	2.56	0.69
Men's Wrestling	119	2.20	0.83
Women's Rowing	40	3.03	0.88
Women's Basketball	42	2.95	0.59
Women's Softball	55	3.01	0.68
Women's Track	41	2.74	0.81
Total	743	2.44	0.83

When determining specific differences in GPA, football ($M = 2.20$, $SD = 0.81$) was significantly less from baseball ($M = 2.56$, $SD = 0.69$, $p = 0.001$), women's rowing ($M = 3.03$, $SD = 0.88$, $p = 0.001$), women's basketball ($M = 2.95$, $SD = 0.59$, $p = 0.001$), and women's softball ($M = 3.01$, $SD = 0.68$, $p = 0.003$). Baseball was found to be significantly different from football, wrestling ($M = 2.20$, $SD = .083$, $p = 0.005$), women's rowing ($M = 3.03$, $SD = 0.88$, $p = 0.004$), women's basketball ($M = 2.95$, $SD = 0.59$, $p = 0.013$) and women's softball ($M = 3.01$, $SD = 0.68$, $p = 0.002$). With the exception of baseball ($M = 2.56$, $SD = 0.69$) had a lower GPA than all other sports. Wrestling was significantly different than baseball, women's track ($M = 2.74$, $SD = 0.81$, $p = 0.01$) and women's basketball ($M = 2.95$, $SD = 0.59$, $p = 0.001$). Wrestling ($M = 2.20$, $SD = 0.083$) has a lower GPA than all the sports it reported differences from. This data is displayed in Table 3.

GPA by College

The eight colleges of the student athletes were compared for GPA (Table 4). The eight colleges were the College of Education and Professional Studies (CEPS), Liberal Arts (CLA), Business (CB), Math and Science (CMS), Fine Arts and Design (CFAD), Academy of Music (ACM), Institute of Forensic Science (FSI) and Undeclared (UND). Colleges were first used to determine the academic clustering of the student athletes. If there was a significant difference in the colleges, a difference by majors was explored. A significant difference was found between colleges for GPA (M = 2.44, SD = 0.83, $F(7, 735) = 9.47$, p = 0.001). There was a significant difference between CEPS (M = 2.41, SD = 0.72) and CMS (M = 2.71, SD = 0.88, p = 0.024) and UND (M = 1.72, SD = 0.98, p = 0.001). CEPS had a lower GPA than CMS, and a higher GPA than UND. UND GPA was significantly different from the CEPS (M = 2.41, SD = 0.72, p = 0.001), CLA (M = 2.43, SD = 0.91, p = 0.001), CB (M = 2.58, SD = 0.74, p = 0.001), and CMS (M = 2.77, SD = 0.88, p = 0.001). UND had a lower GPA than all the colleges it reported differences from. There was no significant difference between the CFAD ACM and FSI GPAs from the other colleges. This data is displayed in Table 4

Table 4.

GPA by College

College	N	Mean	SD
CEPS	350	2.41	0.72
CLA	113	2.43	0.91
CB	126	2.58	0.74
CMS	80	2.77	0.88
CFAD	5	2.64	1.28
ACM	3	1.64	0.83
FIS	7	2.07	0.64
UND	57	1.72	0.98
Total	741	2.44	0.83

GPA by Sport and College

Table 5.

One-way ANOVAs of GPA to Sport and College

	df				
College	Between	Within	All	F	Significance
All Colleges	7	735	742	9.47	0.001*
CEPS	6	352	358	10.118	0.001*
CLA	6	106	112	2.773	0.015*
CB	6	120	126	2.34	0.035*
CMS	6	73	79	3.871	0.002*
CFAD	2	2	4	3.61	0.21
ACM	1	1	2	3.70	0.30
FIS	2	4	6	0.33	0.073
UND	5	43	48	2.864	0.026*

**p<0.05*

Since there was a difference between sport and GPA, as well college to GPA, the colleges were isolated to determine the difference in the sports and GPAs (Table 5). This data is shown in Table 5. A significant difference was found between GPAs of sports in the CEPS (M = 2.42, SD = 0.65, $F(6, 352) = 10.11$, p = 0.001).

As shown in Table 6 Football (M = 2.19, SD = 0.66) had a significant difference in GPA from baseball (M = 2.53, SD = 0.61, p = 0.007), women's rowing (M = 3.07, SD = 0.62, p = 0.001), women's basketball (M = 2.85, SD = 0.46, p = 0.001) and women's softball (M = 2.87, SD = 0.66, p = 0.001). Football had a lower GPA than all the other sports in CEPS. For the CEPS, wrestling had a significant difference in GPA from rowing (M = 3.07, SD = 0.62, p = 0.003), women's basketball (M = 2.85, SD = 0.46, p = 0.001) and women's softball (M = 2.87, SD = 0.66, p = 0.007). Wrestling (M = 2.22, SD = 0.77) had a lower GPA than all the sports reported significant differences.

Table 6.

GPA to Sport and College, higher enrolled colleges

	Education			Liberal Arts			Business		
Sport	N	Mean	SD	N	Mean	SD	N	Mean	SD
Men's Football	152	2.19[bdef]	0.66	53	2.21	0.86	53	2.47[d]	0.72
Men's Baseball	70	2.53[ad]	0.61	14	2.38	0.96	38	2.72	0.67
Men's Wrestling	52	2.22[def]	0.77	19	2.29	1.01	18	2.26[d]	0.75
Women's Rowing	18	3.07[abc]	0.62	5	3.04	0.43	4	3.32 [ac]	0.31
Women's Basketball	22	2.85[ac]	0.46	7	2.96	0.82	6	3.0	0.83
Women's Softball	26	2.87[ac]	0.66	9	2.73	0.73	4	2.69	0.68
Women's Track	19	2.59	0.81	6	3.35	0.64	4	2.97	1.06
Total	743	2.42	0.65	113	2.43	0.91	127	2.59	0.74

a= Indicates Team's College GPA is significantly different than Men's Football to the p<0.05 level
b= Indicates Team's College GPA is significantly different than Men's Baseball to the p<0.05 level
c= Indicates Team's College GPA is significantly different than Men's Wrestling to the p<0.05 level
d= Indicates Team's College GPA is significantly different than Women's Rowing to the p<0.05 level
e= Indicates Team's College GPA is significantly different than Women's Basketball to the p<0.05 level
f= Indicates Team's College GPA is significantly different than Women's Softball to the p<0.05 level
g= Indicates Team's College GPA is significantly different than Women's Track to the p<0.05 level

CLA had a significant difference in GPAs by sports (M = 2.43, SD = 0.91, $F(6, 106)$ = 2.77, p = 0.015) as shown in Table 6. A trend for significance was demonstrated between football (M = 2.21, SD = 0.86) and softball (M = 2.73, SD = 0.73, p = 0.051), and football and rowing (M = 3.04, SD = 0.43, p = 0.069).

CB also had a significant difference in GPA by sport (Table 6). Football (M = 2.47, SD = 0.72) was significantly different to women's rowing (M = 3.32, SD = 0.31, p = 0.036). Wrestling (M = 2.26, SD = 0.75) was also significantly different to women's rowing (M = 3.32, SD = 0.31, p = 0.010). Women's rowing had a significantly higher GPA than football and wrestling.

CMS had a significant difference between sports and GPA (M = 2.77, SD = 0.88, p = 0.002). Football (M = 2.51, SD = 1.07) was significantly different from women's softball (M = 3.55, SD = 0.33, p = 0.005). Football had a lower GPA than women's softball. Wrestling (M = 2.32, SD = 0.81) was significantly different from women's basketball (M = 3.29, SD = 0.23, p = 0.007) and women's softball (M = 3.51, SD = 0.33, p = 0.001). This can be shown with wrestling having a lower mean GPA compared to women's basketball and softball. Women's track (M = 2.6, SD = 0.75) was also significantly different from women's softball (M = 3.55, SD = 0.33, p = 0.023). Women's softball had a higher GPA than women's track in CMS.

Table 6.

GPA to Sport and College, higher enrolled colleges continued

	Math and Science			Undeclared		
Sport	N	Mean	SD	N	Mean	SD
Men's Football	22	2.51[f]	1.07	30	1.42[d]	0.92
Men's Baseball	5	2.83[c]	0.95	2	1.93	0.15
Men's Wrestling	16	2.32[e,f]	0.81	12	1.66	0.86
Women's Rowing	8	2.89	0.68	1	3.34[a]	
Women's Basketball	5	3.29	0.23	2	2.95	1.17
Women's Softball	14	3.55[a,c]	0.33	2	3.06	0.66
Women's Track	11	2.6	0.75	0		
Total	81	2.7	0.88	49	1.68	0.98

a= Indicates Team's College GPA is significantly different than Men's Football to the p<0.05 level
b= Indicates Team's College GPA is significantly different than Men's Baseball to the p<0.05 level
c= Indicates Team's College GPA is significantly different than Men's Wrestling to the p<0.05 level
d= Indicates Team's College GPA is significantly different than Women's Rowing to the p<0.05 level
e= Indicates Team's College GPA is significantly different than Women's Basketball to the p<0.05 level
f= Indicates Team's College GPA is significantly different than Women's Softball to the p<0.05 level
g= Indicates Team's College GPA is significantly different than Women's Track to the p<0.05 level

UND had a significant difference in GPA between sports (M = 1.68, SD = 0.91, F (5, 44) = 2.86, p = 0.015). There was a significant difference between football (M = 1.42, SD = 0.92) and women's rowing (M = 3.34, SD = 0.0, p = 0.034), with football having a GPA of 1.42 and women's rowing of 3.04. This is shown in Table 6.

CFAD, ACM and FSI were not analyzed due to the small amount of student athletes in each college as shown in Table 7.

Table 7.

GPA to Sport and College, lower enrolled colleges

	Fine Arts			Academy of Music			Institute of Forensic Science		
Sport	N	Mean	SD	N	Mean	SD	N	Mean	SD
Men's Football	0			2	1.21	0.54	4	2.1	0.71
Men's Baseball	1	1.25		1	2.5		0		
Men's Wrestling	2	2.17	1.19	0			0		
Women's Rowing	2	3.82	0.09	0			2	1.79	0.78
Women's Softball	0			0			1	2.52	
Total	5	2.64	1.28	3	1.64	0.83	7	2.07	0.64

GPA by Sport and Major

Mean GPA by sport and college are displayed in Table 6 and 7. Since there was a significant difference in CEPS, CLA, CB, CMS and UND; majors in the colleges were explored. There were thirty three different majors, and the ten highest claimed majors differences were explored. The ten highest claimed majors were General Studies (n = 155), Kinesiology (n = 78), Industrial Safety (n = 55), UND (n = 48), Business Administration (n = 47), General Criminal Justice (n = 44), Physical Education (n = 33), Management (n = 25), Biology (n = 25), and Mass

Communication (*n* = 23). These ten majors account for 71.8 % of majors chosen by student athletes. CFAD, ACM and FIS were not explored due to low student athlete declaration.

Table 8.

GPA to Highest Frequency Majors and Sport , Education College

	Kinesiology			General Studies			Physical Education			Industrial Safety		
Sport	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Men's Football	33	2.57	0.65	73	2.01[b,e,f]	0.51	13	1.77	0.92	29	2.34[b]	0.55
Men's Baseball	9	2.46	0.85	39	2.37[a,f]	0.6	6	2.91	0.32	17	2.85[a,c]	0.35
Men's Wrestling	11	2.31	0.97	21	2.16[e,f]	0.49	8	2.24	0.99	9	2.28[b]	0.56
Women's Rowing	10	3.01	0.8	0			2	2.8	0.85			
Women's Basketball	3	2.9	0.81	11	2.73[a,c]	0.44	2	2.74	0.31			
Women's Softball	6	3.04	0.99	12	2.8[a,c]	0.42	1	1.59				
Women's Track	6	2.36	0.8	0			1	3.24				
Total	78	2.61	0.79	156	2.23	0.58	33	2.25	0.09	55	2.49	0.55

a= Indicates Team's Major GPA is significantly different than Men's Football to the p<0.05 level
b= Indicates Team's Major GPA is significantly different than Men's Baseball to the p<0.05 level
c= Indicates Team's Major GPA is significantly different than Men's Wrestling to the p<0.05 level
d= Indicates Team's Major GPA is significantly different than Women's Rowing to the p<0.05 level
e= Indicates Team's Major GPA is significantly different than Women's Basketball to the p<0.05 level
f= Indicates Team's Major GPA is significantly different than Women's Softball to the p<0.05 level
g= Indicates Team's Major GPA is significantly different than Women's Track to the p<0.05 level

GPA by Sport in the College of Education and Professional Studies Majors. As shown in Table 8, within CEPS (*n* = 358), General Studies (*n* = 156) was found to have a significant difference between sports (*M* = 2.23, *SD* = 0.58, *p* = 0.001). Five sports had General Studies as a major; including football, women's softball, wrestling, women's basketball and baseball. There was a significant difference between football (*M* = 2.01, *SD* = 0.51) by baseball (*M* = 2.37, *SD* = 0.6, *p* = 0.021), women's basketball (*M* = 2.73, *SD* = 0.44, *p* = 0.002), and women's softball (*M* = 2.8, *SD* = 0.42, *p* = 0.001). Football has a lower GPA (2.01) than both of these sports. Wrestling (*M* = 2.16, *SD* = 0.49) had a significant difference in GPA to women's

basketball (M = 2.73, SD = 0.44, p = 0.023) and women's softball (M = 2.8, SD = 0.42, p = 0.004). Wrestling also had a lower GPA than both women's basketball and women's softball.

Kinesiology had no significant differences in GPAs by sport (p = 0.308). All sports were represented. Industrial Safety had a significant difference between sports (M = 2.49, SD = 0.55, p = 0.003). Industrial Safety only had three sports, football, baseball and wrestling. There was a significant difference between baseball (M = 2.85, SD = 0.35) by football (M = 2.34, SD = 0.55, p = 0.004) and wrestling (M = 2.28, SD = 0.56, p = 0.042). There was no significant difference between Physical Education major GPAs to sports (M = 2.25, SD = 0.09, p = 0.119), though all sports were represented.

GPA by Sport in College of Liberal Arts Majors. For the CLA (n = 113) there were two majors heavily reported; Criminal Justice (n = 44) and Mass Communications (n = 23). There was no significant difference between Criminal Justice majors GPA by sport (M = 2.46, SD = 0.71, p = 0.158) nor Mass Communications (M = 2.48, SD = 0.72, p = 0.68). In both majors all sports were represented. This is shown in Table 9.

Table 9.

GPA To Highest Frequency Majors and Sport, Liberal Arts & Business College

	Criminal Justice			Mass Communication			Business Administration			Management		
Sport	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Men's Football	26	2.45	0.62	7	2.21	0.81	20	2.31	0.82	14	2.54	0.63
Men's Baseball	3	1.49	0.92	4	2.77	0.98	18	2.68	0.59	6	2.64	0.68
Men's Wrestling	6	2.66	0.75	4	2.08	0.41	6	2.32	1.09	3	2.31	0.72
Women's Rowing	1	1.7		4	2.87	0.21						
Women's Basketball	2	2.47	1.22	2	2.89	1.24	1	2.79		1	1.48	
Women's Softball	5	2.61	0.6	1	2.39		1	3.15				
Women's Track	3	3.02	0.8	1	2.66		1	1.62		1	3.61	
Total	46	2.46	0.71	23	2.48	0.724	47	2.47	0.77	25	2.54	0.68

GPA by Sport in College of Business Majors. The two business majors explored; which included Business Administration (M = 2.47, SD = 0.77, n = 47) and Management (M = *2*.54, SD = 0.68, n = 25). Business Administration represented all sports except women's rowing, though no significant difference was found in GPA by sports (p = 0.506). Management represented all sports excluding women's rowing and women's softball. There was no significant difference in GPA between the student athletes with Management major (p = 0.68), as shown in Table 9.

GPA by Sport in College of Math and Science Majors. CMS was the fourth largest college for student athletes (M = 2.77, SD = 0.88, n = 81). The largest major in this college was Biology (M = 2.99, SD = 0.75, n = 25). All sports were represented in this major. There was no significant differences in GPA between sports (p = 0.199) as shown in Table 10.

Table 10.

GPA to Highest Frequency Majors, Math and Science & Undeclared

	Biology			Undeclared		
Sport	N	Mean	SD	N	Mean	SD
Men's Football	5	2.95	0.62	25	1.52[a]	0.89
Men's Baseball	2	2.46	0.82	3	1.93[a]	0.12
Men's Wrestling	5	2.65	1.21	12	1.66[a]	0.86
Women's Rowing	1	3.67		1	3.39[b]	
Women's Basketball	3	3.35	0.3	2	2.95[b]	1.17
Women's Softball	6	3.51	0.32	2	3.06[b]	0.61
Women's Track	3	3.5	0.15	0		
Total	25	2.99	0.75	49	1.68	0.95

a=Indicates Team's Major GPA is significantly different than Women's sports to p<0.01 level
b=Indicates Team's Major GPA is significantly different than Men's sports to p<0.01 level

GPA by Sport in Undeclared Major. In UND (M = 1.68, SD = 0.95, n = 45) included all sports except women's track and field. There was a significant difference between sports by GPA, $F(5, 43) = 2.86$, $p = 0.02$. Due to the small numbers in some of the sports a post-hoc test was not conducted between the seven sports. To create a comparison, the average GPA of male sports (including football, wrestling and baseball) was compared to the average GPA of female sports (women's basketball, women's rowing, women's softball and women's track. There was a significant different in sport by GPA in the undeclared major ($p = 0.001$). The female sports average a higher GPA (M = 3.00) than male sports (M =1.52).

Outside Factors

Academic Status. The difference between GPA and sport was significant ($p = 0.001$), when only the graduates (M = 2.87, SD = 0.46) and in school (M = 2.69 , SD = 0.73) GPAs were addressed there was also a significant difference (M = 2.44 , SD = 0.83, $p = 0.001$) in GPA by sport (Table 11). As previously referenced the data set included the average GPA for all academic statuses. No student athletes were excluded due to their academic standing. Therefore all statuses included were those who graduated, are currently in school, left school with eligible, left while ineligible, exhausted eligibility and academically suspended. The differences between graduate and in school were explored to investigate trends of the current student body to the past.

The in-school GPA (M = 2.69, SD = 0.73, $F(6,201) = 4.66$, $p = 0.001$) was significantly different and shown in Table 13. Football (M = 2.53, SD = 0.74) was significantly different from women's rowing (M = 3.08, SD = 0.52, $p = 0.035$) and women's softball ((M = 3.17, SD = 0.61, $p = 0.018$). Football had a lower GPA than both women's rowing and women's softball. Baseball (M = 2.33, SD = 0.7) was significantly different from women's rowing (M = 3.08, SD = 0.52, $p = 0.008$), women's softball (M = 3.17, SD = 0.61, $p = 0.004$) and women's track (M =

2.93, *SD* = 0.7, *p* = 0.040). Baseball had a lower in school GPA compared to these other sports. There was not a significant difference between men's wrestling and other sports, as well for women's basketball and other sports (Table 13).

Table 11.

One-way ANOVA of GPA to Academic Status and Sport

	df				
	Between	Within	All	F	Significance
Total	6	736	742	21.14	0.001*
In School	6	201	207	4.668	0.001*
Graduated	5	253	259	13.73	0.001*

**p<0.05*

The overall GPAs between graduates and in school student athletes was compared in an independent *t* -test. There was a significant difference between the GPAs of graduates (*n* = 260, *M* = 2.87, *SD* = 0.46) and in school student athletes (*n* = 208, *M* = 2.69, *SD* = 0.73, *p* = 0.002). This is differences is displayed in Table 12.

Table 12.

GPA to Academic Status and Sport

	Graduate			In school			Total		
Sport	N	Mean	SD	N	Mean	SD	N	Mean	SD
Men's Football	90	2.63[b,d,e,f]	0.38	79	2.53 [d,f]	0.74	313	2.20	0.81
Men's Baseball	68	2.92[a,d]	0.41	26	2.33[d,f,g]	0.7	131	2.57	0.69
Men's Wrestling	39	2.78 [d,f]	0.37	30	2.67	0.67	119	2.20	0.83
Women's Rowing	19	3.34 [a,b,c]	0.44	14	3.08 [a,b]	0.52	40	3.03	0.65
Women's Basketball	18	3.1[a]	0.47	14	2.89	0.64	42	2.95	0.59
Women's Softball	24	3.19 [a,c]	0.45	16	3.17 [a,b]	0.61	55	3.02	0.668
Women's Track	2	3.72	0.19	29	2.93 [b]	0.7	41	2.75	0.081
Total	260	2.87	0.46	208	2.69	0.73	743	2.44	0.83

a= Indicates Team's Academic Status GPA is significantly different than Men's football to the p<0.05 level

b= Indicates Team's Academic Status GPA is significantly different than Men's Baseball to the p<0.05 level

c= Indicates Team's Academic Status GPA is significantly different than Men's Wrestling to the p<0.05 level

d= Indicates Team's Academic Status GPA is significantly different than Women's Rowing to the p<0.05 level

e= Indicates Team's Academic Status GPA is significantly different than Women's Basketball to the p<0.05 level

f= Indicates Team's Academic Status GPA is significantly different than Women's Softball to the p<0.05 level

g= Indicates Team's Academic Status GPA is significantly different than Women's Track to the p<0.05 level

One may note that the overall GPA for student athletes is lower than the in school and graduates. This is hypothesized to be due to the athletes that were academically suspended during this time period (n = 75, M = 1.15, SD = 0.56) and those who left the school while academically ineligible (n = 73, M = 1.69, SD = 0.45). This would account for 19% of the overall GPA. There were also 30 student athletes who exhausted their eligibility (M = 2.00, SD = 0.47)

and 96 student athletes who left while eligible (M = 2.42, SD = 0.84). Those who exhausted their eligibility would account for 4.02% of the total. Those who left while eligible would account for 12.2% of the overall GPA of student athletes; however their GPA was the most similar to the overall GPA and may not have caused as significant of an effect.

Roster Years. Roster years were addressed to investigate the further trend of the APR. The APR has different academic stipulations for each year of eligibility. Roster years were investigated to explore if there was a major and GPA trend due to these stipulations. These stipulations included completed credit hours, GPA and progress towards degree. Each one of these factors may skew a student athlete's decision.

Overall there was a significant difference found between sport to roster years (Table 13). Roster years were defined as a scalar variable of one to six years to which the athlete was claimed eligible to compete. As for roster years there was a significant difference found between sports (F(6, 736) = 5.74, p = 0.01). Such that football (M =1.95, SD = 1.18) was significantly different than women's basketball (M = 2.66, SD = 1.39, p = 0.043) and women's track and field (M = 1.53, SD = 0.74, p = 0.035). There was a difference between baseball (M = 1.77, SD = 0.91) to wrestling (M = 2.2, SD = 1.36, p = 0.02) and women's basketball (M = 2.66, SD = 1.39, p = 0.005). Wrestling had a significant difference in roster years from baseball and women's track and field (p = 0.001). Women's rowing (M = 1.8, SD = 1.03) only reported a significant difference from women's basketball (p = 0.039). Women's basketball was significantly different from women's rowing, women's track and field (p = 0.001), baseball and football. Women's track and field was significantly different from women's softball (p = 0.022).

Table 13.

Roster Years to Academic Status and Sport

	Graduate Roster Years			In school Roster Years			Total Roster Years		
Sport	N	Mean	SD	N	Mean	SD	N	Mean	SD
Men's Football	90	2.71 [b,c]	1.36	79	1.78	1.03	313	1.96 [e,g]	1.18
Men's Baseball	68	2.05 [a,c,e]	0.92	26	1.42[e]	0.64	131	1.77 [c,e]	0.91
Men's Wrestling	39	3.43 [a,b,d]	1.37	30	1.2	1.05	119	2.26 [b,g]	1.36
Women's Rowing	19	2.21 [c]	1.13	14	1.57	0.85	40	1.82 [e]	1.03
Women's Basketball	18	3.33 [b]	1.18	14	2.85[b]	1.35	42	2.26 [a,b,d,g]	1.39
Women's Softball	24	2.62	1.2	16	2	0.96	55	2.2[g]	1.2
Women's Track	2	1.5	0.7	29	1.68	0.8	41	1.53 [a,c,e,f]	0.74
Total	260	2.63	1.3	208	1.83	1.01	743	2	1.18

a= Indicates Team's Academic Status Roster Years are significantly different than Men's football to the p<0.05 level
b= Indicates Team's Academic Status Roster Years is significantly different than Men's Baseball to the p<0.05 level
c= Indicates Team's Academic Status Roster Years are significantly different than Men's Wrestling to the p<0.05 level
d= Indicates Team's Academic Status Roster Years are significantly different than Women's Rowing to the p<0.05 level
e= Indicates Team's Academic Status Roster Years is significantly different than Women's Basketball to the p<0.05 level
f= Indicates Team's Academic Status Roster Years is significantly different than Women's Softball to the p<0.05 level
g= Indicates Team's Academic Status Roster Years is significantly different than Women's Track to the p<0.05 level

When comparing the roster years to graduation (Table 13) there was a significant difference between the sports, $F(6, 253) = 7.032$, $p = 0.001$. There was a significant difference between baseball ($M = 2.05$, $SD = 0.92$) to wrestling ($M = 3.43$, $SD = 1.37$, $p = 0.001$), football ($M = 2.71$, $SD = 1.36$, $p = 0.009$) and women's basketball ($M = 3.33$, $SD = 1.18$, $p = 0.005$). Wrestling had a significant difference from baseball and women's rowing ($M = 2.21$, $SD = 1.13$, $p = 0.013$). Women's softball and women's track were not significantly different. This is hypothesized to be due to the small amount of graduates from women's track, as well as the deviation of 0.70 from the mean roster years to graduation.

To address the in school roster years to graduates an independent *t* test was used. There was a significant difference between the sports ($p = 0.001$). There was a significant difference ($p = 0.023$). between baseball ($M = 2.05$, $SD = 0.92$) and women's basketball ($M = 3.33$, $SD = 1.18$).

Table 14.

Roster Years to College

	Roster Years		
College	N	Mean	SD
Education	359	2.14	1.18
Liberal Arts	113	1.85	1.23
Business	127	2.14	1.2
Math & Science	80	1.8	1.14
Fine Arts	5	1.6	0.89
Academy of Music	3	2	1.73
Institute of Forensic Science	7	1.57	0.78
Undeclared	49	1.4	0.76
Total	743	2	1.18

The difference in roster years to college was explored and displayed in Table 14. There was found to be a significant difference between colleges and roster years, $F(7,735) = 3.64$, $p = 0.01$. There was a significant difference between UND ($M = 1.40$, $SD = 0.76$) to CEPS ($M = 2.14$, $SD = 1.18$, $p = 0.01$) and CB ($M = 2.14$, $SD = 1.20$, $p = 0.01$). The difference in roster years for each sport was explored for the CEPS, CB and UND.

The difference between roster years to college by sport was compared as shown in Table 15. CEPS had a significant difference in roster years between the sports, ($F(6, 352) = 4.19$, $p = 0.001$). Women's track ($M = 1.42$, $SD = 0.76$) was significantly different from football ($M = 2.14$, $SD = 1.20$, $p = 0.01$), baseball ($M = 1.87$, $SD = 0.93$,$p = 0.01$), wrestling ($M = 2.59$, $SD = 1.40$, $p = 0.01$), women's rowing ($M = 1.88$, $SD = 1.07$, $p = 0.01$), women's basketball ($M = 2.68$, $SD = 1.17$, $p = 0.01$) and women's softball ($M = 2.23$, $SD = 1.10$, $p = 0.01$). This can be expected since

track became a varsity sport during the total time period of this study, which therefore resulted in less roster years per team. Baseball was significant difference from women's track and wrestling ($p = 0.032$). Wrestling was significantly different from baseball, women's track and women's softball ($p = 0.01$). This lower GPA of baseball and wrestling allow with clustering may be addressed later on.

Table 15.

Roster years to College by Sport

	Education			Business			Undeclared		
Sport	N	Mean	SD	N	Mean	SD	N	Mean	SD
Men's Football	152	2.14[g]	1.2	53	2.18	1.2	30	1.5 [d,e,f]	0.9
Men's Baseball	70	0.87 [c,g]	0.93	38	1.84	0.09	2	1.5	0.7
Men's Wrestling	52	2.59 [b,f,g]	1.4	18	1.83	0.92	12	1.3	0.49
Women's rowing	18	1.88[g]	1.07	4	3.0	1.41	1	1[a]	
Women's Basketball	22	2.6[g]	1.17	6	4.16[g]	1.32	2	1[a]	
Women's Softball	26	2.23[g]	1.1	4	2.5	1.73	2	1[a]	
Women's Track	19	1.42 [a,b,c,d,e,f]	0.76	4	1.5[e]	0.57	0		
Total	359	2.14	1.18	127	2.14	1.2	49	1.4	0.76

a= Indicates Team's College Roster Years are significantly different than Men's football to the p<0.05 level
b= Indicates Team's College Roster Years is significantly different than Men's Baseball to the p<0.05 level
c= Indicates Team's College Roster Years are significantly different than Men's Wrestling to the p<0.05 level
d= Indicates Team's College Roster Years are significantly different than Women's Rowing to the p<0.05 level
e= Indicates Team's College Roster Years is significantly different than Women's Basketball to the p<0.05 level
f= Indicates Team's College Roster Years is significantly different than Women's Softball to the p<0.05 level
g= Indicates Team's College Roster Years is significantly different than Women's Track to the p<0.05 level

Table 16.

Roster Years to Highest Frequency Majors and Sport , Education College

	Kinesiology			General Studies			Physical Education			Industrial Safety		
Sport	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Men's Football	33	2.06 [b]	1.24	73	2.2 [e]	1.21	13	1.69	0.94	29	2.27	1.22
Men's Baseball	9	1.11 [a]	0.33	39	1.94 [c,e]	0.91	6	2.66	1.5	17	1.88	0.6
Men's Wrestling	11	2	1	21	3.04 [b]	1.43	8	2.75	1.58	9	2.55	1.33
Women's Rowing	10	2	1.24	0			2	2	1.41			
Women's Basketball	3	2	1	11	3.18 [ab]	0.98	2	2	1.41			
Women's Softball	6	1.5	0.83	12	2.25	1.05	1	1				
Women's Track	6	1.5	0.54	0			1	1				
Total	78	1.84	1.08	156	2.32	1.2	33	2.12	1.29	55	2.2	1.09

a= Indicates Team's Major Roster Years are significantly different than Men's Football to the p<0.05 level
b= Indicates Team's Major Roster Years are significantly different than Men's Baseball to the p<0.05 level
c= Indicates Team's Major Roster Years are significantly different than Men's Wrestling to the p<0.05 level
d= Indicates Team's Major Roster Years are significantly different than Women's Rowing to the p<0.05 level
e= Indicates Team's Major Roster Years are significantly different than Women's Basketball to the p<0.05 level
f= Indicates Team's Major Roster Years are significantly different than Women's Softball to the p<0.05 level
g= Indicates Team's Major Roster Years are significantly different than Women's Track to the p<0.05 level

With a significant difference in CEPS roster years, the common majors of Kinesiology, General Studies, Physical Education and Industrial Safety were explored and shown in Table 16. There was no significant difference in roster years between sports for Industrial Safety, Kinesiology or Physical Education. This is displayed in Table 17. For individual sports there was a significant difference in roster years for football to baseball in General Studies (GS), $F(4,69) = 2.62$, $p = 0.01$. As well football ($M = 2.27$, $SD = 1.22$) was significantly different in Industrial Safety (IS) from baseball ($M = 1.88$, $SD = 0.6$, $F(2, 52) = 1.159$, $p = 0.005$) and wrestling ($M = 2.57$, $SD = 1.51$, $p = 0.042$). There was a significant difference between sports in GS ($F(4,141) = 3.93$, $p = 0.001$). There was a significant difference between baseball ($M = 2.02$, $SD = 0.93$) to

women's basketball (M = 3.18, SD = 0.98, p = 0.014) and wrestling (M = 3.04, SD = 1.43, p = 0.026).

CB also had a significant difference in roster years to sport, $F(6, 106) = 2.54$, $p = 0.001$. There was a significant difference between women's track (M = 2.16, SD = 0.98) to women's basketball (M = 1.85, SD = 0.89, p = 0.030). When the roster years were compared between business administration and management, no significance was found.

Finally the undeclared major was explored due to significant difference in roster years between sports. There was a no significant difference between all sports, F (5, 44) = 0.27, p = 0.92). However football was significantly different in roster years compared to women's rowing (M = 1.44, SD = 0.93, p = 0.013), women's basketball (M = 1.00, SD = 0.00, p = 0.013), and women's softball (M = 1.0, SD = 0.0, p = 0.013).

Table 17.

GPA to Academic Admit Status and Sport

	Start			Transferred to UCO		
Sport	N	GPA	SD	N	GPA	SD
Men's Football	79	2.31*	0.9	136	2.01*	0.7
Men's Baseball	30	2.53	0.8	100	2.57	0.7
Men's Wrestling	84	2.22	0.8	35	2.15	0.9
Women's Rowing	31	3.08	0.7	9	2.85	0.6
Women's Basketball	28	2.04	0.6	14	2.76	0.6
Women's Softball	34	2.05	0.7	21	2.95	0.7
Women's Track	30	2.77	0.8	11	2.65	0.7
Total	416	2.51*	0.9	327	2.34*	0.8

**Indicates Admit Status GPA is different than other by a significant difference of p<0.05*

Academic Admit Status. One academic factor is the admit status of the student athlete. There were two statuses investigated, started undergraduate career at UCO and transferred into the university. The descriptive data of all teams are reported above (Table 17). There was a significant difference in the overall GPA of started to transfer status ($p = 0.01$). There was only one significant difference in the teams, which occurred in football ($p = 0.01$).

Table 18
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*GPA to First Term Attended**

First Term	N	Mean	SD
Fall01-Sum02	3	2.71	0.15
Fall02-Sum03	20	2.45	0.52
Fall03-Sum04	50	2.46	0.47
Fall04-Sum05	34	2.67	0.69
Fall05-Sum06	83	2.45	0.79
Fall06-Sum07	93	2.27	0.88
Fall07-Sum08	75	2.51	0.82
Fall08-Sum09	106	2.39	0.94
Fall09-Sum10	101	2.37	0.82
Fall10-Sum11	90	2.43	0.87
Fall11-Sum12	88	2.54	0.87
Total	743	2.43	0.83

**First Term attend for student athletes of Fall 2006-Fall 2012*

First Term. The first term of student athletes to GPA was explored (Table 18). The first term was divided into the academic year the student first began taking classes at the university. The sample set only included athletes who were competing during fall 2005- fall 2012 for the university. There was no significant difference in the GPA of student athletes first term ($p = 0.466$).

Male and Female. The GPAs of men's and women's sports teams were compared by college (Table 19). There was a significant difference between sexes ($p = 0.001$). There was a significant difference in GPA between the sexes in CEPS ($p = 0.001$), CLA ($p = 0.001$), CB ($p = 0.001$), CMS ($p = 0.001$), CFAD ($p = 0.001$) and Undeclared ($p = 0.001$).

Table 19

Differences in GPA by College and Sex

	Male			Female		
College	N	GPA	SD	N	GPA	SD
Education	274	2.29*	0.7	85	2.84*	0.7
Liberal Arts	86	2.26*	0.9	27	2.99*	0.7
Business	109	2.52*	0.7	18	2.99*	0.7
Math and Science	42	2.48*	1	38	3.1*	0.7
Fine Arts	3	1.86*	1	2	3.82*	0.1
Academy of Music	3	1.64	0.8	0		
Institute of For. Sci	4	2.1	0.7	3	2.03	0.7
Undeclared	44	1.53*	0.9	5	3.08*	0.7
Total	565	2.27*	0.8	178	2.94*	0.7

**Indicates College GPA is different than other sex by a significant difference of $p<0.05$*

Discussion

Summary of Findings

GPA by Sport. In GPA to sport there was a significant difference in males and females ($p = 0.01$). The male sports (football, baseball and wrestling) had a significantly different GPA (Table 3) compared to the female sports (rowing, basketball, softball and track). Female sports had a higher GPA averaging 2.94 ($SD = 0.07$), compared to males with a mean GPA of 2.27 ($SD = 0.8$). As for individual teams, wrestling ($SD = 0.83$) and football ($SD = 0.81$) both average 2.20, while baseball averaged 2.50 ($SD = 0.69$) and displayed in Table 3. As for the female sports track reported the lowest GPA of 2.74 ($SD = 0.08$), while softball ($M = 3.01$, $SD = 0.68$), basketball *(*$M = 2.95$, $SD = 0.59$) and rowing ($M = 3.03$, $SD = 0.88$) had similar GPAs.

GPA by College. Due to the differences between sports, the differences in GPAs by colleges were explored (Table 4). There was a significant difference between CEPS and CMS, ($F(7,742) = 9.47$, $p = 0.024$), and UND, $F(7,742) = 9.47$, $p = 0.01$. UND was also significantly different from CEPS, CLA, ($F(7,742) = 9.47$, $p = 0.001$), CB, $F(7,742) = 9.47$, $p = 0.001$, and CMS, ($F(7,742) = 9.47$, $p = 0.001$). Differences were not able to be calculated in the CFAD, ACM nor FSI due to the low amount of student athlete in each college (Table 2). Of the higher declared colleges, CMS reported that highest GPA ($M = 2.77$, $SD = 0.88$) and Undeclared the lowest ($M = 1.69$, $SD = 0.98$). Therefore the difference between the CEPS ($M = 2.43$, $SD = 0.72$) is to be expected, since it is reported similar to the average of all sports ($M = 2.44$, $SD = 0.83$).

GPA By Sport and College. With the difference found in sport and college separately, both variables were assessed in their difference to GPA (Table 6). A significant difference was found to GPA by sports in CEPS, $F(6, 352) = 10.118$, $p= 0.001$, CLA, $F(6, 106) = 2.773$, $p=$

0.015, CB, $F(6, 120) = 2.3$, $p = 0.001$, CMS, $F(6, 73) = 3.871$, $p = 0.002$, and Undeclared, $F(5, 43) = 2.864$, $p = 0.01$. The CFAD, ACM and FSI were not analyzed due to the small amount of student athletes in the colleges (Table 4).

Individual colleges were explored between the teams. As shown in Tables 6 and 7, CLA, CFAD, ACM and FSI reported no significant difference in GPA by sport teams. However the CEPS reported a range of GPAs from the different sports, from football ($M = 2.19$, $SD = 0.66$) to rowing ($M = 3.07$, $SD = 0.62$). Accordingly there were many differences reported between the sports, including football being significantly different from baseball, $F(6, 352) = 10.118$, $p = 0.06$, women's rowing, ($p = 0.01$) women's basketball, ($p = 0.01$) and softball, ($p = 0.01$). Another highly chosen college, CB, only demonstrated differences between women's rowing to football ($F(6, 352) = 10.118$, $p = 0.034$) and wrestling ($p = 0.01$).

CMS also had a range of scores from wrestling averaging 2.32 GPA ($SD = 0.81$) to softball with 3.55 ($SD = 0.33$). There were significant differences reported between four sports $F(6, 73) = 0.3871$, $p = 0.01$. The Undeclared college had the largest range, from rowing ($M = 3.34$, $SD = 0.0$) to football ($M = 1.42$, $SD = 0.92$) and a significant difference was shown between these teams, $F(5, 43) = 2.864$, $p = 0.01$.

GPA by Sport and Major Due to the difference in the colleges, the most frequent majors were assessed. Of the ten most frequent majors General Studies (GS), ($F(4,151) = 10.035$, $p = 0.01$), Industrial Safety (IS), $F(2, 52) = 6.451$, $p = 0.01$, and Undeclared, $F(5,43) = 2.864$, $p = 0.01$, majors had a significant difference between the sports. GS was the most popular ($n = 156$), IS was third ($n = 55$) and UND sixth ($n = 49$). It can be noted that the only three sports had student athletes in all of these majors, including football, baseball and wrestling. In UND and GS these three sports all had significantly lower GPAs than the female sports (Table 10). Only the

three males sports chose IS as a major (Table 8). Football, $F(2, 52) = 6.451$, $p = 0.01$, and wrestling, $F(2, 52) = 6.451$, $p = 0.04$, had significantly different GPAs than baseball in this major.

As for GS there was a significant difference between all sports (Table 7), with a range of 2.01 average for football and 2.8 to softball in the most popular major. Women's rowing was not represented in this major, and they have the highest GPA as a team.

Another note is the major of biology had no significant difference in GPAs between sports ($M = 2.99$, $SD = 0.75$, $F(6,18) = 1.618$, $p = 0.19$). The average GPA was 2.99 and the range of 2.46 for baseball to 3.67 for rowing were all above the overall student athlete GPA of 2.43 (Table 9).

Outside Factors

GPA by Academic Status. As for academic status, the graduated GPA ($M = 2.86$, $SD = 0.46$) was higher than the in-school GPA ($M = 2.69$, $SD = 0.73$) and the overall GPA ($M = 2.44$, $SD = 0.83$). The overall GPA may be skewed due to the amount of student athletes academically suspended and left while academically ineligible. Football did receive academic suspension during this time which was hypothesized to skew the overall number. Though the addition of two women's sports accommodates this inequality, and the statistical analysis run accounted for the lack of homogeneity. Therefore the significant differences between in-school, graduated and total are valid (Table 11).

However as shown in Table 12, the graduated GPA ($M = 2.86$, $SD = 0.46$) is higher than the in-school GPA ($M = 2.69$, $SD = 0.73$). Respectively football and wrestling both had the lowest average GPAs, their graduated 2.63 ± 0.38 and 2.78 ± 0.37 and in-school 2.53 ± 0.74 and 2.67 ± 0.67 was above the all sport average 2.44 ± 0.83. However they are still the lower end of

both in-school and graduated GPAs. The difference between male and female sport GPAs are sustained in-school and graduated GPAs.

GPA by Roster Years. To continue the difference in overall to graduated and in-school, there was a significant difference in roster years in many of the sports, in all academic statuses (Table 12). There was a significant difference in graduated between men's wrestling (M = 3.43, SD = 1.37) to football (M = 2.71, SD = 1.36), baseball (M = 2.05, SD = 0.92) and rowing (M = 2.21, SD = 1.13). Wrestling had the highest amount of roster years to graduated (M = 3.43, SD = 1.37), however the lowest number of roster years in-school (M = 1.2, SD = 1.05). The 208 student athletes in-school currently have a higher GPA than the overall average (M = 2.44, SD = 0.83), the higher GPA is promising since the average amount of roster years is 1.83 (SD = 1.01).

Roster years differences in colleges and sports were also compared. As shown in Table 16, there was a significant difference in roster years between sports in the CEPS $F(6,352)$ = 10.118, p = 0.001, CB, $F(6,120)$ = 2.34, p = 0.01, and Undeclared, $F(5,43)$ = 2.864, p = 0.01). Undeclared was expected to have the lowest roster years since student athletes may only claim undeclared for the first four semesters. Though there was a significant difference between the sports in roster years in Undeclared, $F(5,43)$ = 0.268, p = 0.001, and there was also a significant difference in GPA by sports $F(5,43)$ = 2.864, p= 0.01, in this college.

There were only two sports who had a significant difference in roster years in CB (M= 2.14 , SD = 1.2), therefore the common majors were not explored. In CEPS there were many sports with differences in roster years, therefore the common majors in the college were explored (Table 16).

General Studies demonstrated differences in roster years in many of the sports. Football's roster years were significant different than women's basketball, $F(4,151)$ = 4.830, p = 0.01.

Baseball's roster years were also significantly different from women's basketball, $F(4, 151) = 4.830$, $p = 0.01$. Men's wrestling also had a significant difference to baseball $F(4, 151) = 4.83$, $p = 0.01$. The other major in CEPS with differences in roster years was Kinesiology with a significant difference in roster years between football and baseball, $F(6,71) = 1.21$, $p = 0.01$. Otherwise there were no significant differences reported in roster years when comparing majors and sports.

Roster years still have an average of 2.0 ± 1.18 years, which may be shown by the younger population of athletes at UCO, as well as the amount of transfers into the school. Being a Division II school, there are many transfer student athletes. Moreover in Table 18, football is the only sport that has a significant difference in transfer GPA ($M = 2.01$ years, $SD = 0.7$) to started at UCO GPA, $F(1, 313) = 6.802$, $p = 0.01$. The first term was also explored. As shown in Table 18, There was no difference between student athletes and their GPA regardless of their year admitted $F(10, 732) = 0.973$, $p = 0.46$).

As previously reported, there were significant differences in college GPA by sports. When comparing student athlete GPA from males ($M= 2.27$, $SD = 0.8$) and females ($M = 2.94$, $SD = 0.7$) a difference was found in every college except for FIS (Table 19). ACM did not have any female student athletes declare the college and a comparison could not be made (Table 19).

Interpretation of Results

GPA by Sport. The difference in GPA between sports was to be expected as shown in previous research (Callahan, 2008; Hardwick-Day, 2008; Harrison et al., 2009; Kane, Leo & Holleran, 2008; Johnson, Wessel and Pierce, 2009; Sanders & Hilderbrand, 2010). Due to the academic suspension of football, the lower GPA was expected. The high GPA of rowing was

unexpected, since it is a sport that relies heavily on inner campus recruitment. Therefore it was hypothesized that student athletes joining the team would not come into college expecting the extra time commitment of a sport. This increase in time demands may hinder academic progress, however it is not shown in women's rowing GPA.

As shown in Hardwick-Day (2009), many females are hypothesized to choose college on academic profile more so than athletic profile. Also Division II male student athletes have a lower GPA than Division III male student athletes. Hardwick-Day (2008) stated that male student athletes in Division II schools have a lower academic profile since they may have chosen a university on athletic scholarship instead of their future academic achievement. The lower GPA of male student athletes may be explained by this idea. As well Coakley hypothesized many male student athletes who utilize their athletic abilities to enter college are underprepared for the academics of college (Coakley, 2007). Coakley investigated the socio-economical factors of high school student athletes and their selection of colleges. These athletes may have a lower expectation for academic success, and the adjustment to a higher expectation may be difficult.

GPA by College When comparing the difference in GPA to sport and college, academic clustering was to be expected (Fountain & Finley, 2009; Fountain & Finley, 2011; Pendergrass, Hansen, Neuman, and Nutter, 2003; Schneider, Ross, & Fisher, 2010). The current research did not predict which college would have the higher GPA, nor differences. The difference in GPA by sports through CEPS was significant, and was best displayed in the enrollment of the General Studies major. This major has been hypothesized to be the path of least resistance due to it's flexibility in scheduling and classes (Fountain & Finley, 2009; Fountain & Finley, 2011). This lower GPA in General Studies between males between females may be seen as due to clustering of the less academically prepared males. This major allows for many different paths and class

timing, which may accommodate different strengths in student athletes. Since male student athletes may not be as prepared or have difficulty finding strengths, this major may accommodate their eligibility for their first two roster years. Another difference in sport GPA within CEPS was between Physical Education and Kinesiology. As shown in Table 8, an example of this is the mean Physical Education GPA was 1.77 (*SD* = 0.92) for football players while Kinesiology was 2.57 (*SD* = 0.65). This difference may be accounted for by class timing and academic preparation. Academic preparation may be aided by more academic and study focused work in the student athlete's high school education.

As for other colleges, CLA did have a significant difference between sports though no difference was seen within two exact sports, $F(6,106) = 2.773$, $p = 0.01$. Overall as a group (M = 2.43, SD = 0.91) there was a significant difference in GPAs, this may have occurred within the same sport. Furthermore there was no significant difference between the common majors of Criminal Justice nor Mass Communication. There was a similar situation with the CB ($F(6,120) = 2.3$, $p = 0.01$) such that only women's rowing reported significant differences between football ($F(6,120) = 2.3$, $p = 0.03$) and wrestling ($F(6,120) = 2.3$, $p = 0.03$).

CMS demonstrated a significant difference between sports, $F(6,73) = 3.871$, $p = 0.01$ (Table 7) by GPA. The most frequent major of biology (n = 25) had no significant difference in GPAs by sports. In the major of biology the average GPA was 2.99 (*SD* = 0.75) and the range of baseball's 2.46 (*SD* = 0.82) to rowing's 3.67 (*SD* = 0.0) were all above the overall student athlete GPA of 2.44 (*SD* = 0.83). The author hypothesized there may be differences in other majors chosen. This college has the highest average GPA of the colleges. It is hypothesized that student athletes who have chosen this college are strongly committed to their degree and career path, and therefore may have academically prepared themselves before choosing this major for many

students (Coakley, 2009). This academic preparation through high school academic achievement may deter from lower GPAs. As well, this dedication to academics in high school in place of athletics, may explain the lack of enrollment compared to other majors. If the student only focused on academics in high school, they may not have participated in competitive sports.

The Undeclared College displayed a significant difference in the GPAs by females and males. The author hypothesize this difference in GPA is due to the amount of roster years. Research has shown that student athletes who are Undeclared tend to have lower GPAs and lower graduation rates (Callahan, 2008; Johnson, Wessel & Pierce, 2009). Females have a higher GPA in the Undeclared college (M = 3.08, SD = 0.7) and lower roster years (M = 1.0 year, SD = 0.0). Therefore it may be implied that lower academic profile student athletes are placed into Undeclared college, in accordance with their academic preparation. The lack of a major may allow for less purposeful academic goals, and therefore lead to a lower GPA. Those who declare a major earlier have a higher GPA. Even more so the time management and academic aid particular to the major may be applied earlier in the academic career.

The lack of enrollment in CFAD and ACM is to be expected due to the high school involvement of many student athletes (Fountain & Finley, 2009; Fountain & Finley, 2011; Pendergrass, Hansen, Neuman, and Nutter, 2003; Schneider, Ross, & Fisher, 2010). The lower enrollment in the Institute of Forensic Science was expected due to its recent creation in Fall 2011.

Outside Factors. As displayed in Table 13, the graduated GPA is higher than the in-school GPA. The goal of the APR for student athletes is continuing sports and academics to increase their GPA throughout the years. As well, part of the APR is completed credit hours, therefore student athletes may become more academically inept as they continue school to

increase their GPA. Also the current in-school athletes may be earlier in their academic career. The overall GPA (N =743, $M = 2.44$, $SD = 0.83$) was lower than the in-school GPA ($n = 208$, $M = 2.69$, $SD = 0.73$), showing that there was academic disturbance throughout the years.

When comparing the first term of the athletes during this time period there was no difference in GPA to first term attended. Therefore the academic profile of incoming student athletes may not have changed. Though the student athletes recruited may be performing better in-school, as viewed with the GPA.

Relationships of Results to Current Research

GPA by Sex. As part of this study, the influences of the APR on GPA, credits completed and declaration of major are indirectly assessed. The roster years on Undeclared major were below 2.0. This was expected since student athletes must declare a major by the end of fourth semester, which for many is their second year on the roster. However males had a significantly lower GPA in this major compared to females. It can be hypothesized that male sports, specifically football, may have used this major as the path of least resistance to help incoming student athletes stay eligible. Female sports may have stricter academic guidelines within their teams that may dictate their choosing of a major. As described by Coakley (2007) and furthered by Harrison et al., (2009) the gender identity dictates identity and ideology more than sport participation. Sport participation did show to aid in academic success for males (Harrison et al, 2009), however performance was still below females.

This may also be due to the academic path chosen by the student athlete before they entered college. Male athletes may have more focus on athletic goals when entering college compared to females who may be more academically driven (Coakley, 2007). As previously stated, student athletes may use their athletic abilities to receive admission into schools that may

be academically above their current ability. Furthermore females have less chance of playing sports professionally, and may already be choosing a college on academics instead of athletics. Coakley (2007) suggests that many athletes who choose their school on athletics have focused much of their high school career preparing for university athletics, as opposed to university academics. These student athletes may not be prepared for college academics.

The addition of two women's team, both rowing and track, did not affect the GPA of the first term of student athletes. This may be due to the timing of both sports, such that their entrance coincided with academic suspension of football. Both women's rowing and women's track, similar to other female teams, had higher overall GPAs which elevated the overall student athletes GPA.

GPA by Sport In previous research the distinction between males and females dictated the trend in sports. Football and men's basketball had the lowest GPAs (Callahan, 2008; Kane, Leo & Holleran, 2008), which though men's basketball was not represented in this study due to sample size of UCO team; football did follow this trend of the lowest GPA. Johnson, Wessel and Pierce (2009) investigated the academic success of first year athletes and also reported females had a higher GPA in the first year. As shown in this study, less females were enlisted in the undeclared college and for less time, therefore more females are declaring a major in their first year which may have aided in their higher academic success.

Scott, Paskus, Miranda, Petr and McArdle (2008) reported average GPAs by sport of Division II student athletes. Scott et al., (2008) reported football and wrestling to have the lowest GPAs of the male sports (M = 2.53, SD = 0.80). These finds are in agreement with the current study. Baseball had one of the higher GPAs in Scott et al., (2008) with 2.83 (SD = 0.70) compared to the other male sports. The GPAs of the UCO male student athletes were not this

high, however had a similar trend of baseball having a higher GPA (*M* = 2.56, *SD* = 0.69) compared to the football (*M* = 2.20, *SD* = 0.81) and wrestling (*M* = 2.20, *SD* = 0.83). As for the women's sports, there were many similarities in GPA compared to Scott et al. (2008). Women's rowing reported a similar GPA (*M* = 3.03, *SD* = 0.88) compared to Scott et al. with an average GPA of 3.05 (*SD* = 0.66). Softball also had a similar GPA (*M* = 3.01, *SD* = 0.68) compared Scott et al. (*M* = 3.05, *SD* = 0.67). Women's basketball continued the trend with an average GPA of 2.95 (*SD* = 0.59) compared to the previous research's average of 2.99 (*SD* = 0.72). Women's track was not explored in Scott et al., (2008). Since the previous research occurred after the in-statement of the APR in 2005, it can be determined that UCO women's sports have a similar academic profile to these student athletes. Also male student athletes have a similar trend but overall lower GPAs compared to the research.

GPA by College/Academic Clustering When comparing the difference in GPA to sport and college, academic clustering was to be expected. As shown in Schneider, Ross and Fisher (2010), Division I football student athletes had a significantly different academic preference than the general student body. Fountain and Finley (2009) also compared eleven Division I Football team's academic clustering, defined as more than 25% of the team in a certain major. All teams portrayed clustering into a certain major. In further research by Fountain and Finley (2011) the majors that were clustered into were either in the College of Business, College of Liberal Arts, or University Studies. Though Fountain and Finley (2009 & 2011) only surveyed the football team, this clustering is also seen in the football players of UCO. Such that many of them choose a similar major of General studies, majors in CB and many in CLA. The majors of Kinesiology and Industrial Safety were not represented in Fountain and Finley (2009 & 2011). Therefore the clustering reported in this study was similar to previous research.

In the previous research, (Schneider, Ross & Fisher, 2010; Fountain & Finley, 2009; Fountain & Finley, 2011) the implications for further research were the longitudinal clustering of student athletes. Such that if these clusterings were due to the new APR or if they were due to the interests of the student athletes. Schneider, Ross and Fisher (2010) hypothesized that the three main reasons clustering occurred were group theory, academic preparedness, and flexible schedule. All three of these justifications could be applied to the current research. There has yet to be a study comparing the clustering of female student athletes compared to male student athletes, however this researcher hypothesized different trends may appear. This may also be an avenue for future research.

GPA by Academic Status A notable difference shown was the higher GPA in graduated athletes compared to the in-school and average. LaForge and Hodge (2011) describe the APR as incentive to continue progress towards graduation and continue high academic standards. Therefore with graduation having higher roster years (M = 2.63 years, SD = 1.3) compared to in-school (M = 1.83 years, SD = 1.01) and average (M = 2.0 years, SD = 1.18), the results are similar to the idea of more roster years and higher GPA. The higher GPA due to higher roster years may also be explained by the increase in time management skills and academic preparedness that incurs with more years of college. The author hypothesized that the guideline of choosing a major by the fourth semester (second roster year) may be used to create a realistic goal of academic preparedness. It may be thought that by the fourth semester the student athlete may be more academically inept to choose a fitting major for their interests and stay academically eligible (LaForge & Hodge, 2011).

GPA by Admit Status Though UCO does have transfer students as a part of the data, which may have skewed the roster years, there has yet to be research to determine if these roster

years are lower than other Division II university athletics. It can be said those who transfer into UCO from junior colleges may have used these years as academic priming and allowed them to become more prepared for the expectations of a Division II University (Coakley, 2007). Therefore those who enter as transfers may be at a similar academic level compared to those whose first admit to college is UCO. Therefore the lack differences in the GPAs of many sports (all expect football) is to be expected.

Implications of the Study

This research implies that academic success, as defined by the APR, is meeting feasible goals in order to achieve timely graduation. As demonstrated in this study those who graduate have higher roster years and a higher GPA. The academic adjustments and knowledge gained from years in college help continue the trend until graduation. Those who do not declare a major may be less likely to experience these changes and therefore drop out of college. Since the average amount of roster years at UCO is 2.0 (*SD* = 1.18 years) due the amount of transfers, it becomes increasingly important to make these academic adjustments early in the student athletes career therefore continue their eligibility and path to graduation,.

In order obtain these skills it is important for student athletes to declare a major early in their career. This leads to the adjustments including five main success factors that attribute to successful student athletes including time management, organization, problem solving, concentration and desire to succeed (Pierce, 2007). Therefore emphasizing these aspects earlier may lead to higher academic success. The academic standard was not to deter students from choosing a certain major, however create realistic goals in each year of eligibility.

Another implication of this study is that the academic status of UCO has improved over the years. As when comparing the in-school (*M* = 2.69, *SD* = 0.73) is higher than the average

GPA of all academic statuses (*M* = 2.44, *SD* = 0.83). These means cannot be compared since one is a sample of the population. The increase in GPA of in-school athletes to the overall average may be a positive note for the current state of the student athlete academics.

As part of this study and investigated into roster years, adherence to colleges may be determined for UCO. This may create a better idea of which colleges, and therefore majors most student athletes stay eligible and continue to graduate in. As shown CB (*M* = 2.13, *SD* = 1.20 years) and CEPS (*M* = 2.14, *SD* = 1.18 years) had the highest roster years of all the colleges. This selection of college for continued years may also be a reflection of academic clustering.

As for academic cluster, there was clustering into CEPS as defined by more than 25% of the population enrolling in this college (N = 743, *n* = 358). The two other highest colleges were CB and CLA, though these totals were not over 25% of the total population. The clustering was anticipated due to previous research.

A final implication of this study is continuing focus on improving male student athlete academics in the university setting. Male student athletes have been reported achieving lower GPAs than female student athletes in previous research. As previously mentioned male Division II student athletes have a lower academic profile than other Divisions, therefore these student athletes are a demographic that Division II universities must be aware of. Accordingly, these student athletes may require extra tutoring or academic preparation in order to succeed in the university setting.

Limitations

Since this study utilized archival data there were many limitations with the data provided.The data provided did not include demographic data such as hometown or race. Much research is focused on the importance of race in the student athletes and much research has found

this to be a determining factor (Christy, Selfried, & Pastore, 2008; Fountain & Finley, 2009; Killeya, 2001). Furthermore previous academic history was not provided. Though the admit status of started at UCO or transferred was included, there was no note of how many years of university experience the student athlete had nor the level of university previously attended. Along with their academic preparedness coming into UCO, entering age was not included in the data. This information would have identified student athletes as well.

As well the data provided only included teams with a roster size of 40 or more student athletes over the allotted time of Fall 2005 to Spring 2011. Therefore sports such as men's basketball, men's golf, women's golf and women's tennis were not included in this study. The small roster sizes may have allowed for certain individuals to be identified through their personal data. For future study, all teams should be considered in the study.

A final limitation of this study was the fluidity of head coaches involved in the study. The football team changed coaches three times during the academic year, women's rowing changed head coaches once, and baseball changed coaches once as well. A change in head coach may change the student athletes, the academic profile and cause instability in a program (Kane, Leo & Halloran, 2008). This turn over in coaches is not uncommon in the university setting however may inflate the number of student athletes and allows for differences academic standards for student athletes as well. This is not seen as a significant factor though may explain the large number of football student athletes. Softball, wrestling, women's basketball, and women's track all maintained the same coach. In future studies for singular programs, the time period used may reflect only one head coach.

Recommendations for future study

GPAs have been known to be a significant factor in job placement and post graduate success (Fountain & Finley, 2009). Even more so, though females did distribute differently, they consistently had a higher GPA in all colleges. Further research is needed to relate GPAs to longitudinal academic clustering from the APR. The overall academic clustering of sports may provide further insight into the distribution of sports and their academic success. Also the trend of academic clustering over the years should be explored, since the original distribution of sports may have changed due to the APR. In future research, the academic clustering over the years in relation to GPA should be explored to show if the undeclared major is becoming less used, in hopes of creating more prepared student athletes. Another aspect is academic clustering comparing males and females as shown by the GPA difference in female student athletes.

In relation to further studies in GPA by major and sport, more research is needed into declaring a major. Factors such as semester declared by sport may aid retention of student athletes in a major, with those who commit earlier being more academically successful. As well insight into the importance GPA by student athletes who took summer classes may aid in academic success.

Another factor that was not explored in this study, though has been the focus of many other studies is the influence of race in GPA by major and sport (Christy, Selfried, & Pastore, 2008; Fountain & Finley, 2009; Killeya, 2001). This demographic information was not provided in order to maintain data anonymity. This factor has been shown to be a significant factor in GPA and may influence the differences in GPA by sport and major (Fountain & Finley, 2009; Fountain & Finley, 2011; Schneider, Ross & Fisher, 2010).

With the differences in similar majors such as an example of this is the mean Physical Education GPA was 1.77 (*SD* = 0.92) for football players while Kinesiology was 2.57 (*SD* = 0.65), may imply the differences in academic requirements may be explored. The increase in GPA may be due to class requirements or the academic profile of student athletes entering the major.

When comparing the different academic statuses (left while ineligible, left while eligible, in-school, graduated and academically suspended) as an athletic student body the current trend of in-school GPA is higher than the average. This may be due to academic clustering or a change in the athletic department's handling of academics in the recent year. Future research investigating the change in college distribution and policies of athletic programs due to APR may help answer this question.

With this data, it would be beneficial for future research to conduct a qualitative analysis within the teams to determine which services may aid in student athlete academic success. These items may include high school preparation, class timing, tutors and involvement in the academic community. An example of this qualitative research would be a survey investigating five aspects included in Pierce (2007) of time management, organization, problem solving, concentration and desire to succeed as they relate to the student athletes major. The insight of student athletes would help guide decisions about aiding student athlete academic development. An example of accommodating a troublesome major, such as Physical Education for football players is offering classes at different times, a tutor for major and increasing involvement in the major with the student athletes.

Conclusion

The purpose of this study was to demonstrate how student athlete's sport and major relate to their grade point average (GPA) at the University of Central Oklahoma. There has yet to be a study relating individual sports team's division of majors and their academic success. The author hypothesized there would be a difference in sports and majors. The author furthered with the hypothesis females would have a higher GPA than males due to previous research. A secondary aim was describing the academic clustering of the student athletes.

Overall there was a significant difference in GPA by team and major. The largest factor effecting GPA was sex of the athlete, such that females had higher GPAs than males in many of the majors. The differences in GPA were best demonstrated in the Undeclared major. Females reported a higher GPA and less roster years in this major. Females may be declaring a major earlier than male student athletes, which dictates more academic success. Females may be more academically committed and prepared for collegiate studies. An interesting note is the college of CMS with the highest GPA (M = 2.77, SD = 0.88), and the clustering of student athletes into CEPS. Those who commit to an academic path may rise to the occasion more, as shown by the higher GPA for those outside UND. This researcher implies that if student athletes declare a major earlier, they may adapt to the strains of academic life earlier. This acclamation will allow for higher GPA and more roster years, which are both the implications of the APR. The author hypothesized there would be a difference in GPA by male and female and the null hypothesis may be rejected. As well academic clustering was found in student athletes, as demonstrated by the distribution into CEPS. The differences in GPA by major and sport were significant in multiple majors, which occurred in CEPS, CMS and UND.

Further research on academic clustering of the sports during this time period is needed. More research about change in college enrollment of student athletes and demographics is warranted to better describe academic clustering at UCO.

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APPENDICES

APPENDIX A: INSTITUTIONAL REVIEW BOARD APPLICATION

UNIVERSITY OF Central Oklahoma

UCO IRB Number _____
For Office Use Only

INSTITUTIONAL REVIEW BOARD
APPLICATION FOR REVIEW OF HUMAN SUBJECTS RESEARCH
(Pursuant to Title 45-Code of Federal Regulations-Part 46)

Date: Oct 31, 2012

Title of Project: Correlation of GPA with Major and Type of Sport in Division II Student Athletes.

Principal Investigator(s): Chelsea Smith, Gregory Farnell

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Daytime Phone: 405-974-5304

Funding: **RCSA Grant**

1. Describe the purpose/hypothesis of the project or the research problem in enough detail that we can ascertain what the project is about. Describe why it is being done and the importance of the knowledge expected to result.

The purpose of this study is to demonstrate how student athlete's sport and major relate to their grade point average (GPA) at the University of Central Oklahoma. In 2005, new student athlete academic eligibility guidelines were created for graduation progress and GPA. There has yet to be a study relating sports team's division of majors to their GPA. This research aims to find where academic assistance can be given, the individual teams or majors.

2. Describe the subjects needed for this project and, at a minimum, provide the following information:

a. The type of individuals needed as subjects:

Any UCO Student
Students in investigator(s) class
Other (describe below)

UCO Student Athletes from Fall 2005 to Spring 2011

b. The procedures used to recruit subjects:

Advertisement (flyer)
Email blast
Direct/targeted email
Online posting
In-class announcement
Other (please describe below)

Records will be obtained through master records

c. Site of recruitment of subjects:
None. Information will be derived from archival records

d. Do you plan to recruit subjects from outside businesses, schools, or other organizations?

○ Yes ◉ No

If "yes," attach a copy of the required written permission (email or letter) from the appropriate person authorized to grant such permission.

e. Do you plan to recruit from specific classes?

○ Yes ◉ No

If "yes," attach a copy of the required written permission (email or letter) from the course instructor.

If instructor is a PI or Co-PI, describe measures to minimize undue influence or coercion during recruitment:

f. Do you plan to recruit subjects via email or conduct any of your research via the internet?

○ Yes ◉ No

If "yes," you must give a copy of your IRB application to the UCO Office of Information Technology for authorization. This may be done simultaneous to ORC submission.

g. Do you intend to use an oral or written script or any materials (flyer, letter, advertisement, announcements) as part of the recruitment of research subjects?

○ Yes ◉ No

If "yes," attach a copy of the these scripts/documents.

3. **a. What is the maximum number of subjects you expect to participate?**

Total number of athletes records obtained for that time period.

Provide a justification for that number, i.e. effect size, variability.

This is the total number of athletes records obtained for Fall 2005 to Spring 2011

b. Will you be specifically including or <u>targeting</u> any of the following groups for research subjects? (Select all that apply)

Minors (<18 years old)
Cognitively Impaired
Pregnant Women
Prisoners
Native Americans
Seniors (65 or older)
None of the Above

If any were selected, please explain the additional safeguards used to protect the welfare of these vulnerable groups.

4. **a. Describe the experimental design, i.e. group assignments, measurements or observations of subjects or their environments, and explain what subjects will experience.**

The data that will be archival and obtained through master school records from Fall 2005 - Spring 2011. It will include semester GPA, overall GPA, declared major of semester, graduation GPA, semesters to graduation. Data will provided by the UCO Athletic Department will be pre-coded and not include actual student athletes' names.

b. Will you be using questionnaires, surveys, tests or other written instruments?

○ Yes ◉ No

If "yes," attach a copy of these scripts/documents.

c. Where will data actually be collected (i.e. room number, place)?
Through master records of University of Central Oklahoma. Cindy Boling 405-974-2547

d. Will you be using existing data?

◉ Yes ○ No

If "yes," are data de-identified?

◉ Yes ○ No

If "yes," is database available to the public?

○ Yes ◉ No

e. Will tissue or blood samples be collected for data?

○ Yes ◉ No

If "yes," explain the procedures for disposal.

f. Projected start date:

◉ Upon IRB Approval ○ Other (specify)

Projected end date: May 2013

5. Will medical clearance be necessary for subjects to participate because of tissue or blood sampling, or administration of food or drugs, or physical exercise conditioning?

○ Yes ◉ No

If "yes," explain how the medical clearance will be obtained.

6. Does the research involve any of the following? (select all that apply)

Physical stress including exercise or exertion
Psychological or social stress
Exposure to radiation
Legal risk
Economic risk
Exposure to infectious disease
Personal or sensitive information about subject or family
Offensive, threatening, or degrading materials
Use of confidential records (medical or educational)
None of the above
Other (explain below)

For each item selected:

a. Describe the degree of risk or harm.
The personal information that will be obtained is archival educational records of student athletes from Fall 2005-Spring 2011. It will include semester GPA, overall GPA, declared major of semester, graduation GPA, semesters to graduation and demographic information. The GPA of the student athlete may be sensitive. The degree of risk is very low since the data will be provided to the PI already coded (de-identified)

b. Justify why the risk is necessary.
Nature of study

c. Explain how the risk will be minimized.
The risk will be minimized by de-identifying the data.

7. Will the subjects be deceived or misled in any way?

○ Yes ◉ No

If "yes," describe the deception or omission, justify the necessity, and explain how and when subjects will be debriefed (attach script if used).

8. Will any inducements be offered to the subjects for their participation?

○ Yes ◉ No

a. If "yes," please describe the inducements.

○ Course Credit Option

○ Extra Credit

○ Money (specify amount) _____

○ Other (specify below)

b. If extra course credit is offered to research subjects who are students, what alternative means of obtaining additional credit are available to those students who do not wish to participate in the research project?

9. **a. How will consent be obtained?**

Select one:

Other (explain below how voluntary participation will be secured)

N/A

Attach a copy of the consent form or information sheet (see Informed Consent Form guidelines at www.uco.edu/academic-affairs/research-compliance).

**Submit a Waiver of Documentation of Informed Consent (also available at our website) with your application if there is no signed consent form.*

b. Who will be consented? (select all that apply)

Participant
Child (<18)
Parent/Legal Guardian

c. Specify where consenting will occur:

N/A

d. Is a Waiver of Informed Consent requested? (If approved, informed consent will not be obtained. This is different from the *Waiver of Documentation of Informed Consent.*)

○ Yes ◉ No

e. Will you obtain a Certificate of Confidentiality?

○ Yes ◉ No

If "yes," please provide a copy once obtained.

10. **a. Will any aspect of the data be made a part of a record that can be identified with the subject?**

○ Yes ◉ No

If "yes," describe and justify the necessity.

b. Will a master code sheet be kept for purposes of identity security?

○ Yes ◉ No

If "yes," explain the process and protection of code sheets for identity.

c. Does the study involve?

Audio taping of the subjects
Video taping of the subjects
Taking photographs of the subjects
Digital Imaging of the Subjects
None of the above

If "yes," explain necessity and protections of anonymity. Attach a copy of release or permission form. Describe the storage, disposition, and security provisions taken to protect recordings/photos.

d. Will subjects be identifiable in these recordings?

○ Yes ◉ No

If "yes," explain why this is necessary.

11. Please describe the steps you will take to ensure the confidentiality of the data you collect by answering the following questions:

a. How will the data be reported or disseminated?

Group/aggregate

b. Where (specify office #) and how will the data be securely stored?

Thesis chair's office (CTL 225)

c. Who will have access to the data and/or password?

Both

d. Who will be responsible for secure storage?

Both

e. What will the length of time each of the following will be kept?

Paper data documents: 3 years

Electronic data documents: 3 years

Signed Informed Consent Forms
(Federal regulations require a minimum of 3 years): 3 years

f. How will the data be destroyed? Be sure to specify for electronic data, paper data, and code sheets (as relevant).

The paper will be shredded and the electronic data will be deleted.

12. Will the fact that a subject did or did not participate in a specific experiment or study be made a part of any record available to supervisor, teacher, or employer?

○ Yes ◉ No

If "yes," describe and justify the necessity.

13. Describe the benefits of participation for subjects (if any). [If there is none, say so.]
Since the data provided will be coded, there is no direct benefit to each individual athlete.

14. Describe the benefits of your study to society.
There has yet to be a research study about the aspects a Division II school can improve student athlete academics. In addition, the correlation between major and college GPA in college athletes appears not to be investigated. In the future, student athletes may be given help according the their major or sport and therefore able to not only excel in the classroom but also remain eligible for playing. This can also increase the graduation rates that directly aid funding for the University of Central Oklahoma.

REQUIRED AUTHORIZATION SIGNATURES

SIGNATURE/AFFIRMATION/REPRESENTATION OF PRINCIPAL INVESTIGATOR(S):

(Primary PI must read and initial by hand at each of the below.)

1. _____ This application represents an accurate and complete description of my proposed research project.

2. _____ I agree to provide the proper surveillance of this project to ensure that the rights and welfare of the human subjects are properly protected.

3. _____ I agree to comply fully with any requirements made by the UCO IRB.

4. _____ The human contact portion of my (our) research will not begin until the UCO IRB has given its written approval.

5. _____ Any additions or changes after the project has been approved will be submitted to the IRB for approval prior to implementation.

_____ _____

Signature of Primary Principal Investigator **Date**

_____ _____

Signature of Co-Primary Principal Investigator **Date**

If additional Co-PIs are associated with this project, please attach an additional sheet with name, signature, and date.

I have reviewed this Application for Review of Human Subjects Research, and, subject to approval by the UCO Institutional Review Board, authorize the Principal Investigator(s) to conduct this research. My signature acknowledges that I am aware of this project.

Name of Department Chair: Dr. Debbie Traywick Department:KHS

_____ _____

Signature of Department Chair **Date**

Name of College Dean: Dr. James Machell College:CEPS

Signature of College Dean

Date

UCO Office of Information Technology
(for all e-based research)

Name of UCO IT Representative

Signature of UCO IT Representative

Date

CHECKLIST FOR IRB APPLICATION SUBMISSION:

Please mark which documents you have attached to your IRB Application:

	Attached	Not Applicable
Research Proposal (i.e. thesis proposal, RCSA application, grant proposal)	◉	○
Recruitment Script/documents	○	◉
Informed Consent Form (or Waiver)	○	◉
Instrument(s) (questionnaires, surveys, etc.)	○	◉
Written authorization--classes, organizations	◉	○
Protecting Human Research Participants (PHRP) Training Certificate(s)	◉	○
Have you submitted your application to the Office of Information Technology for approval?	○ Yes	◉

CONTACT INFORMATION FOR QUESTIONS OR CONCERNS:

Dr. Jill A. Devenport
Chair, UCO Institutional Review Board
Director, Office of Research Compliance
Academic Affairs
405-974-5479
irb@uco.edu

Submit **one hard copy** of your application, with all required signatures to:

UCO-IRB Office
ADM 216
Edmond, OK 73034
405-974-5497
405-974-3825 (fax)

AND

Submit **one electronic file** without signatures to irb@uco.edu.

Please note your application will not be processed until the original application with all required signatures is received.

APPENDIX A

List all study personnel who will interact with subjects or private, identifiable data

Research Staff (Last, First)	Degree (B.A., Ph.D...)	Affiliation (UCO or Other)	Role in Research (Data Collection, Conduct Interviews, etc.)	PHRP* Training Certification Date	UCO Email Address
Smith, Chelsea	B.A	UCO	PI	8/30/11	csmith170@uco.edu
Farnell, Greg	Ph.D	UCO	Thesis chair	12/13/11	gfarnell@uco.edu

*Protecting Human Research Participants (PHRP) is a National Institutes of Health on-line training course as required by the Department of Health and Human Services regulations. Visit http://phrp.nihtraining.com/users/login.php. Copies of Certificates of Completion should be attached to the application. Recertification is required every two years and CITI certification can be substituted.

APPENDIX B

Required for Student Investigators

Purpose of project: Masters Thesis

Student qualification to conduct research: (Select all that apply)

Currently in or completed research methods course
Protecting Human Research Participants (PHRP) training**
Prior experience as an independent or supervised Research Assistant
Other (specify below)

Faculty Oversight Assurance

I have reviewed and approved this application and I agree to ensure that all UCO IRB regulations will be complied with.

Name of Faculty Member: Greg Farnell

Signature of Faculty Member: _____

Thesis Chair

* See Student Research Guidelines on our website: www.uco.edu/academic-affairs/research-compliance.

*Protecting Human Research Participants (PHRP) is a National Institutes of Health on-line training course as required by the Department of Health and Human Services regulations. Visit http://phrp.nihtraining.com/users/login.php. All personnel working with subjects or identifiable data must be certified and should attach copies of certificates (see Appendix A).

APPENDIX B: INSTITUTIONAL REVIEW BOARD APPROVAL

November 1, 2012 IRB Application #: 12183

Proposal Title: The Effect of Major and Type of Sport on GPA in Division II Student Athletes

Type of Review: Initial-Exempt

Investigators: Ms. Chelsea Smith, Dr. Greg Farnell

Department of Kinesiology and Health Studies

College of Education and Professional Studies

Campus Box 189

University of Central Oklahoma

Edmond, OK 73034

Dear Ms. Smith and Dr. Farnell:

We have received your application and materials for review by the UCO Institutional Review Board (IRB). The UCO IRB has determined that the above named application is EXEMPT from further review by the board. The Board has provided exempt review under 45 CFR 46.101 (b) (4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. Exempt projects are not subject to further review unless procedures or subjects involved in the project change.

Date of Approval: 11/1/2012

On behalf of the UCO IRB, I wish you the best of luck with your research project. If our office can be of any further assistance, please do not hesitate to contact us.

Sincerely,

Jill A. Devenport, Ph.D.

Chair, Institutional Review Board

Director of Research Compliance, Academic Affairs

APPENDIX C: PRESENTATION SLIDES OF RESEARCH

Difference in GPA by Major and Type of Sport in Division II Student Athletes

Chelsea Smith

Content

- Introduction
- Literature Review
- Methods
- Results
- Discussion
- References

Introduction
Significance of Study

- Purpose of this study was to demonstrate the differences in grade point average (GPA) by major and sport at the University of Central Oklahoma.
- There has yet to be a study relating individual sports team’s division of majors and their academic success.

Introduction
Brief Review of Literature

- National Collegiate Athletic Association (NCAA)
  - Division I, II and III
  - Expectations of student athletes
- Few collegiate student athletes play sports professionally
- APR created in 2003 by and revised in 2005
- Current Research
  - Academic Clustering
  - Factors that may influence Student Athlete Academic Success

Introduction
Hypothesis

- The author hypothesized female teams would have a higher GPA than the male athletes.
- The author hypothesized student athletes would cluster into an academic college.
- There has yet to be a study relating both team and major

Literature Review
Main Research

- APR
- Case Study Research
- Academic Clustering
- Gender Influence
- Demographic Influence
- Predictors of First Year Success

Literature Review Implications of Study

- GPA on student athletes
  - If a certain team has a trend - address team
  - if a certain major has a trend - address major
- APR is graded upon progress toward graduation with 4 year and 6 year rates
  - these same rates of graduation apply to State universities
- Academically ineligible athletes may still receive scholarships (National Collegiate Athletic Association, 2011)

Methods
Participants & Data

- Participants
  - Student Athletes in 7 teams at the University of Central Oklahoma between Fall 2005 to Spring 2011
  - Teams with over 40 on roster during time period

- Data
  - Overall
    - First Term
    - Admit status
    - Academic Status
    - Roster Years
    - Team
    - Graduated GPA
    - Graduated Major
  - Per Semester
    - GPA
    - Major

Methods
Data Defined

- Dependent Variables
  - GPA
  - Roster Years
- Independent Variables
  - Team
  - Major
  - College
  - First Term
  - Academic Status
  - Admit Status

Methods
Procedures

- Data stored in SPSS
- Data was de-identified
- One way ANOVAs
  - Games Howell post hoc
- Independent t-tests

Methods
Data Analysis

- One-way ANOVA - All participants
  - GPA by sport
  - GPA by college
  - GPA by major
- One-way ANOVA - Individual sport
  - GPA by college
  - GPA by major
- Independent *t*-test
  - GPA by sex
  - Roster years by Academic Status

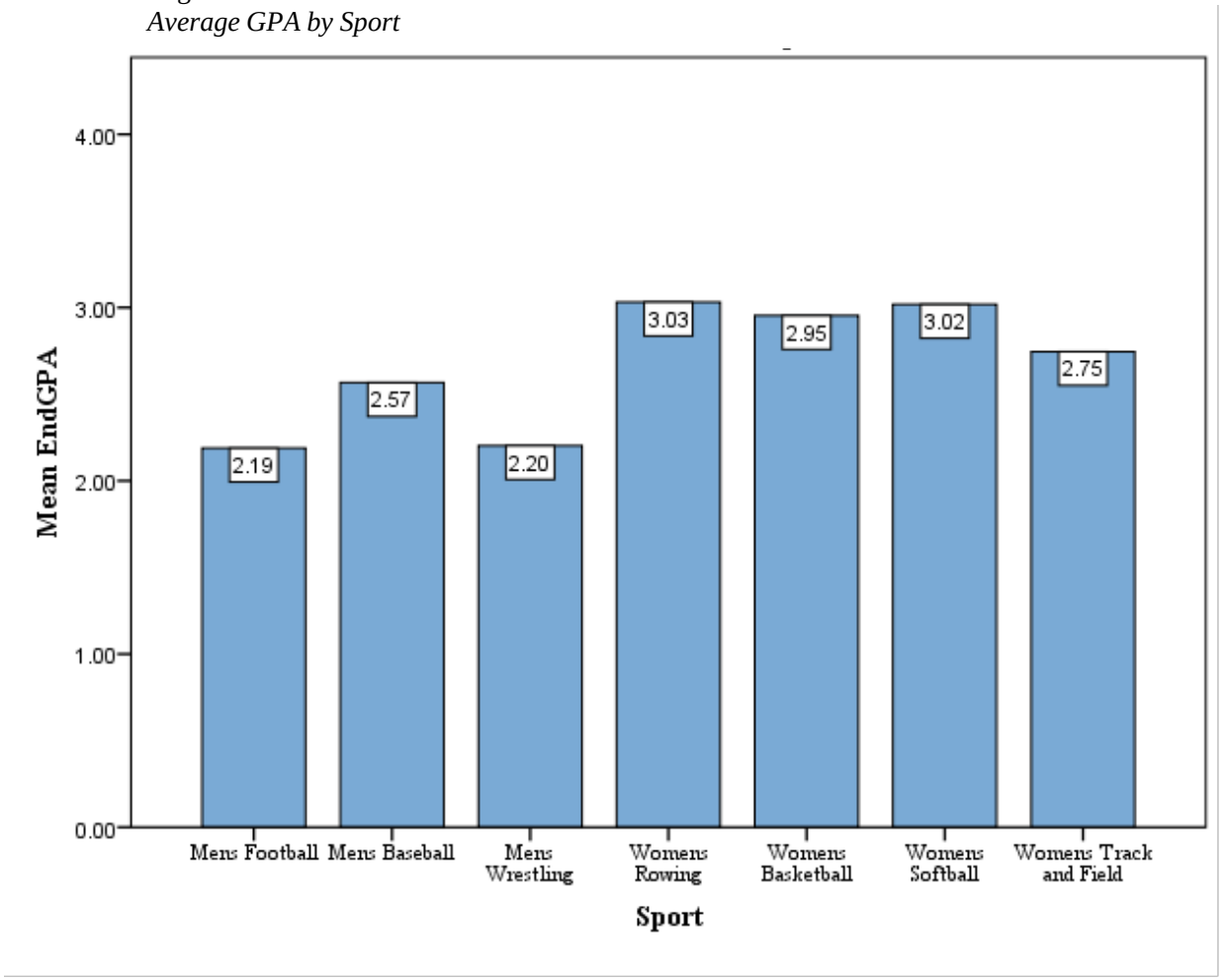
Methods
Data Analysis continued

- One way ANOVA - All participants
  - Roster years by sport
  - Roster years by college
  - Roster years by major
- One way ANOVA - Individual Sport
  - Roster years by college
  - Roster years by major
- One way ANOVA - All participants
  - GPA by admit status
  - GPA by first term
  - GPA by academic status

Results
Descriptive Data

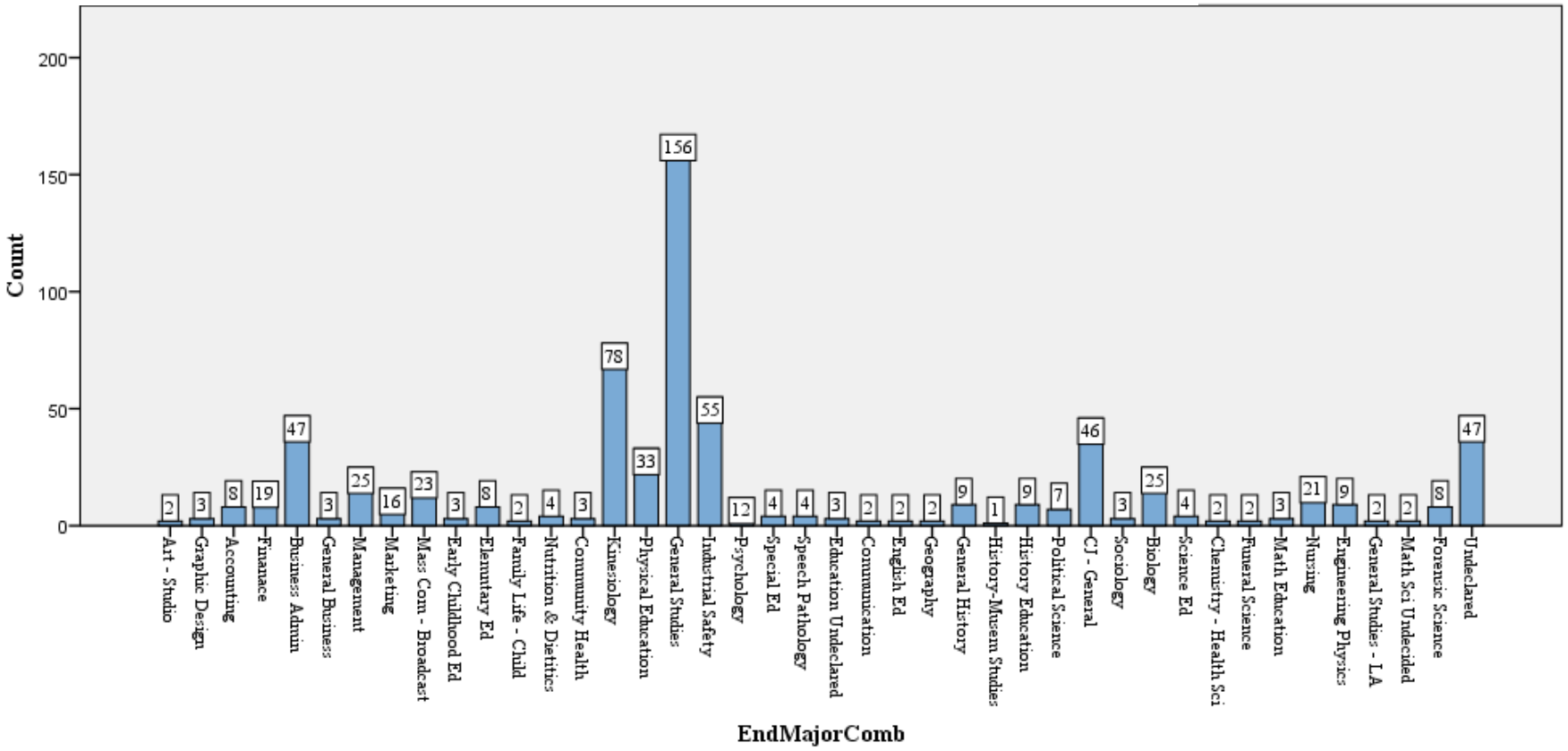
- N = 743
- Fall 2005 to Spring 2011
  - No Fall 2012 GPAs

Figure 1.
Average GPA by Sport



Results
Descriptive Data

Figure 2.
Distribution of End Major



Results
GPA by Sport

- The difference between GPA and sport was significant,
- $F(6, 736) = 21.41$, ($p = 0.001$)

Table 4.

GPA by Sport

Sport	N	Mean	SD
Men's Football	313	2.2024	0.81
Men's Baseball	131	2.5666	0.69
Men's Wrestling	119	2.2029	0.83
Women's Rowing	40	3.0313	0.88
Women's Basketball	42	2.9539	0.59
Women's Softball	55	3.0181	0.68
Women's Track	41	2.7459	0.81
Total	743	2.4448	0.83

Results
GPA by College

- Difference between Colleges
  - $F(7,735) = 9.47,\ p = 0.001$
- Three colleges reported between
  - CEPS
  - CMS
  - Undeclared.

Table 3.

GPA by College

College	N	Mean	SD
CEPS	359	2.4164	0.72
CLA	113	2.4367	0.91
CB	127	2.5882	0.74
CMS	80	2.7716	0.88
CFAD	5	2.6467	1.28
ACM	3	1.641	0.83
FIS	7	2.0748	0.64
Undeclared	49	1.7272	0.98
Total	744	2.4448	0.83

Results
ANOVA of Colleges

Table 5.

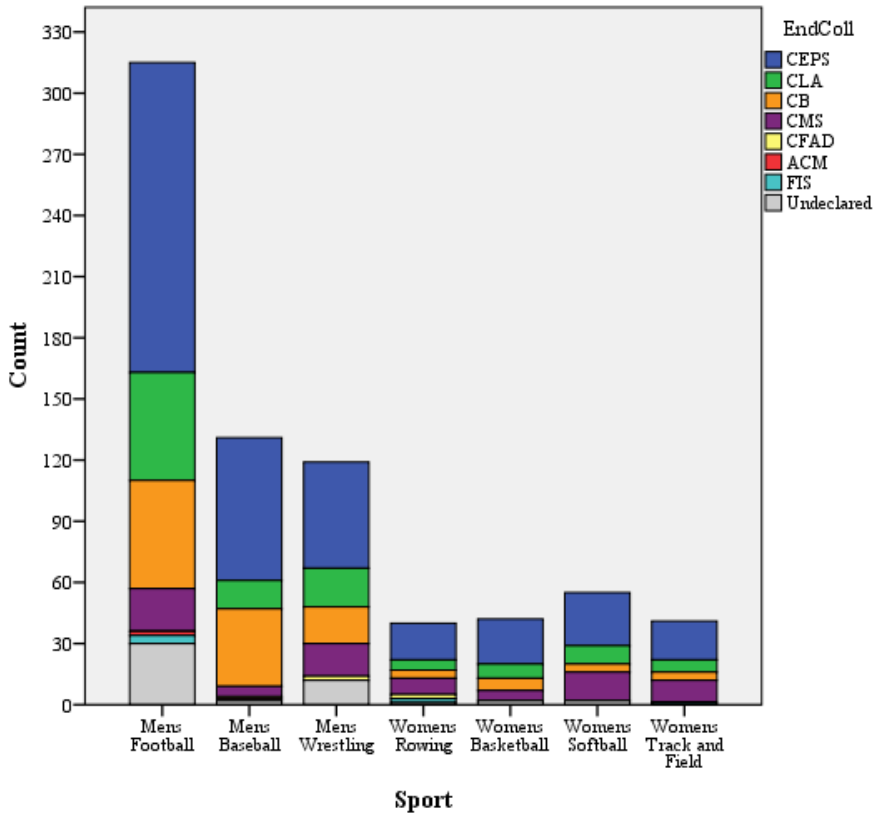
Oneway ANOVAs of GPA to Sport and College

College		df	F	Significance
All Colleges	Between Groups	7	9.47	0.001*
	Within Groups	735		
	All	742		
Education	Between Groups	6	10.118	0.001*
	Within Groups	352		
	All	358		
Liberal Arts	Between Groups	6	2.773	0.015*
	Within Groups	106		
	All	112		
Business	Between Groups	6	2.34	0.035*
	Within Groups	120		
	All	126		
Math and Science	Between Groups	6	3.871	0.002*
	Within Groups	73		
	All	79		
Undeclared	Between Groups	5	2.8634	0.026*
	Within	43		
	All	48		

Results
GPA by Sport and College

- CEPS
  - General Studies
  - Kinesiology
  - Industrial Safety
- CLA
- CB
- CMS
- Undeclared

Figure 3.
College Selection by Sport



Results
GPA by Sport and College

Table 6.

GPA to Sport and College, higher enrolled colleges

	CEPS			CLA			CB	
Sport	N	Mean	SD	N	Mean	SD	N	Mean	SD
Men's Football	152	**2.19**[bdef]	0.66	53	2.21	0.86	53	2.47[d]	0.72
Men's Baseball	70	**2.53**[ad]	0.61	14	2.38	0.96	38	2.72	0.67
Men's Wrestling	52	**2.22**[def]	0.77	19	2.29	1.01	18	2.26[d]	0.75
Women's Rowing	18	**3.07**[abc]	0.62	5	3.04	0.43	4	3.32 [ac]	0.31
Women's Basketball	22	**2.85**[ac]	0.46	7	2.96	0.82	6	3.0	0.83
Women's Softball	26	**2.87**[ac]	0.66	9	2.73	0.73	4	2.69	0.68
Women's Track	19	**2.59**	0.81	6	3.35	0.64	4	2.97	1.06
Total	743	**2.42**	0.65	113	2.43	0.91	127	2.59	0.74

a= Indicates Team's College GPA is significantly different than Men's Football to the p<0.05 level

b= Indicates Team's College GPA is significantly different than Men's Baseball to the p<0.05 level

c= Indicates Team's College GPA is significantly different than Men's Wrestling to the p<0.05 level

d= Indicates Team's College GPA is significantly different than Women's Rowing to the p<0.05 level

e= Indicates Team's College GPA is significantly different than Women's Basketball to the p<0.05 level

f= Indicates Team's College GPA is significantly different than Women's Softball to the p<0.05 level

g= Indicates Team's College GPA is significantly different than Women's Track to the p<0.05 level

Results
GPA by Sport and College

Table 7.
GPA to Sport and College, higher enrolled colleges continued

	CMS			Undeclared		
Sport	N	Mean	SD	N	Mean	SD
Men's Football	22	2.51[f]	1.07	30	**1.42[d]**	0.92
Men's Baseball	5	2.83[c]	0.95	2	1.93	0.15
Men's Wrestling	16	2.32[e,f]	0.81	12	1.66	0.86
Women's Rowing	8	2.89	0.68	1	**3.34[a]**	
Women's Basketball	5	3.29	0.23	2	2.95	1.17
Women's Softball	14	3.55[a,c]	0.33	2	3.06	0.66
Women's Track	11	2.6	0.75	0		
Total	81	2.7	0.88	49	1.68	0.98

a= Indicates Team's College GPA is significantly different than Men's Football to the p<0.05 level

b= Indicates Team's College GPA is significantly different than Men's Baseball to the p<0.05 level

c= Indicates Team's College GPA is significantly different than Men's Wrestling to the p<0.05 level

d= Indicates Team's College GPA is significantly different than Women's Rowing to the p<0.05 level

e= Indicates Team's College GPA is significantly different than Women's Basketball to the p<0.05 level

f= Indicates Team's College GPA is significantly different than Women's Softball to the p<0.05 level

g= Indicates Team's College GPA is significantly different than Women's Track to the p<0.05 level

Results
GPA by Sport and Major

- There was a significant difference
  - General Studies
    - $M = 2.23$, $SD = 0.58$, $p = 0.001$
  - Industrial Safety
    - $M = 2.49$, $SD = 0.55$, $p = 0.003$
  - Undeclared

Results
GPA by Sport and Major

Table 9.

GPA to Highest Frequency Majors and Sport , Education College

	Kinesiology			General Studies			Physical Education			Industrial Safety		
Sport	N	Mean	SD	N	Mean	*SD*	N	Mean	SD	N	Mean	SD
Men's Football	33	2.57	0.65	73	**2.01**[b,e,f]	0.51	13	1.77	0.92	29	**2.34**[b]	0.55
Men's Baseball	9	2.46	0.85	39	**2.37**[a,f]	0.6	6	2.91	0.32	17	**2.85**[a,c]	0.35
Men's Wrestling	11	2.31	0.97	21	**2.16**[e,f]	0.49	8	2.24	0.99	9	**2.28**[b]	0.56
Women's Rowing	10	3.01	0.8	0			2	2.8	0.85			
Women's Basketball	3	2.9	0.81	11	**2.73**[a,c]	0.44	2	2.74	0.31			
Women's Softball	6	3.04	0.99	12	**2.8**[a,c]	0.42	1	1.59				
Women's Track	6	2.36	0.8	0			1	3.24				
Total	78	2.61	0.79	156	**2.23**	0.58	33	2.25	0.09	55	2.49	0.55

a= Indicates Team's Major GPA is significantly different than Men's Football to the p<0.05 level
b= Indicates Team's Major GPA is significantly different than Men's Baseball to the p<0.05 level
c= Indicates Team's Major GPA is significantly different than Men's Wrestling to the p<0.05 level
d= Indicates Team's Major GPA is significantly different than Women's Rowing to the p<0.05 level
e= Indicates Team's Major GPA is significantly different than Women's Basketball to the p<0.05 level
f= Indicates Team's Major GPA is significantly different than Women's Softball to the p<0.05 level
g= Indicates Team's Major GPA is significantly different than Women's Track to the p<0.05 level

Results
GPA by Sport and Major

Table 11.
GPA to Highest Frequency Majors, Math and Science & Undeclared

	Biology			Undeclared		
Sport	N	Mean	SD	N	Mean	SD
Men's Football	5	2.95	0.62	25	1.52[a]	0.89
Men's Baseball	2	2.46	0.82	3	1.93[a]	0.12
Men's Wrestling	5	2.65	1.21	12	1.66[a]	0.86
Women's Rowing	1	3.67	0	1	3.39[b]	0
Women's Basketball	3	3.35	0.3	2	2.95[b]	1.17
Women's Softball	6	3.51	0.32	2	3.06[b]	0.61
Women's Track	3	3.5	0.15	0		
Total	25	2.99	0.75	49	1.68	0.95

a=Indicates Team's Major GPA is significantly different than Women's sports to p<0.01 level
b=Indicates Team's Major GPA is significantly different than Men's sports to p<0.01 level

Results
Outside Factors

- Academic Status
  - Inschool
    - Significant difference was reported between sports
    - $F(6,201) = 4.66,\ p = 0.001$
  - Graduated compared to In school
    - Significant difference ($p = 0.01$)

Results
Outside Factors

Table 13.

GPA to Academic Status and Sport

	Graduate			In school			Total		
Sport	N	Mean	SD	N	Mean	SD	N	Mean	SD
Men's Football	90	2.63[b,d,e,f]	0.38	79	2.53 [d,f]	0.74	313	2.20	0.81
Men's Baseball	68	2.92[a,d]	0.41	26	2.33[d,f,g]	0.7	131	2.57	0.69
Men's Wrestling	39	2.78 [d,f]	0.37	30	2.67	0.67	119	2.20	0.83
Women's Rowing	19	3.34 [a,b,c]	0.44	14	3.08 [a,b]	0.52	40	3.03	0.65
Women's Basketball	18	3.1[a]	0.47	14	2.89	0.64	42	2.95	0.59
Women's Softball	24	3.19 [a,c]	0.45	16	3.17 [a,b]	0.61	55	3.02	0.668
Women's Track	2	3.72	0.19	29	2.93 [b]	0.7	41	2.75	0.081
Total	260	2.87	0.46	208	2.69	0.73	743	2.44	0.83

a= Indicates Team's Academic Status GPA is significantly different than Men's football to the p<0.05 level
b= Indicates Team's Academic Status GPA is significantly different than Men's Baseball to the p<0.05 level
c= Indicates Team's Academic Status GPA is significantly different than Men's Wrestling to the p<0.05 level
d= Indicates Team's Academic Status GPA is significantly different than Women's Rowing to the p<0.05 level
e= Indicates Team's Academic Status GPA is significantly different than Women's Basketball to the p<0.05 level
f= Indicates Team's Academic Status GPA is significantly different than Women's Softball to the p<0.05 level
g= Indicates Team's Academic Status GPA is significantly different than Women's Track to the p<0.05 level

Results
Outside Factors ctn.

- Roster Years
  - Between Sport
    - $F(6,736) = 5.74$, $p = 0.01$
  - Between College
    - $F(7,735) = 3.64$, $p = 0.01$

Table 15.

Roster Years to College

College	N	Mean	SD
CEPS	359	2.14	1.18
CLA	113	1.85	1.23
CB	127	2.14	1.2
CMS	80	1.8	1.14
CFAD	5	1.6	0.89
ACM	3	2	1.73
FIS	7	1.57	0.78
Undeclared	49	1.4	0.76
Total	743	2	1.18

Results
Outside Factors ctn

- Admit Status
  - Significant difference only in football
- First Term to GPA
  - No significant difference ($p = 0.466$)

Discussion
Summary of Findings

- GPA by Sport
  - Significant difference between males and females ($p = 0.01$)
- GPA by College
  - Significant differences ($p < 0.05$) between
    - CEPS to CMS and Undeclared
    - Undeclared to CEPS, CLA, CB and CMS

Discussion
Male and Female

Table 19

GPA by College and Sex

	Male			Female		
College	N	GPA	SD	N	GPA	SD
CEPS	274	2.29*	0.7	85	2.84*	0.7
CLA	86	2.26*	0.9	27	2.99*	0.7
CB	109	2.52*	0.7	18	2.99*	0.7
CMS	42	2.48*	1	38	3.1*	0.7
CFAD	3	1.86*	1	2	3.82*	0.1
ACM	3	1.64	0.8	0		
FIS	4	2.1	0.7	3	2.03	0.7
Undeclared	44	1.53*	0.9	5	3.08*	0.7
Total	565	2.27*	0.8	178	2.94*	0.7

**Indicates College GPA is different than other sex by a significant difference of $p<0.05$*

Discussion
Summary of Findings

- GPA by Sport and College
  - Significant difference ($p < 0.05$) found between sports in CEPS, CLA, CB, CMS and undeclared
- GPA by Sport and Major
  - Significant differences ($p < 0.05$)were found in General Studies, Industrial Safety and Undeclared

Discussion
Interpretation of Results

- GPA by Sport
  - The difference was expected between sexes in sports from previous research (Hardwick-Day, 2008; Johnson, Wessel and Pierce, 2009; Harrison et al., 2009; Kale, Leo & Holleran, 2008; Sanders & Hilderbrand, 2010; Callahan, 2008)
  - Female student athlete choose college on academic profile
- GPA by College
  - Lower GPA in undeclared was expected due to previous research. (Callahan, 2008; Johnson, Wessel & Pierce, 2009)
  - Academic Clustering into CEPS (over 25%), anticipated due to previous research (Schneider, Ross, & Fisher, 2010; Fountain & Finley, 2009; Fountain & Finley, 2011; Pendergrass, Hansen, Neuman, and Nutter, 2003)

Discussion
Interpretation of Results

- Academic Status GPA
  - Graduated GPA was expected to be higher due to the implications of the APR
- First Term
  - Academic profile of student athletes may not have changed due to instatement of APR

Discussion
Relationship to Literature

- GPA to Sex
  - This research reaffirms previous studies (Hardwick-Day, 2008; Johnson, Wessel and Pierce, 2009; Harrison et al., 2009; Kale, Leo & Holleran, 2008; Sanders & Hilderbrand, 2010; Callahan, 2008)
- GPA to Sport
  - This research reaffirms distribution of GPA by Division II sports (Scott, Paskus, Miranda, Petr & McArdle, 2008)
- GPA by College / Academic Clustering
  - Academic clustering was found similar to previous studies, (Schneider, Ross, & Fisher, 2010; Fountain & Finley, 2009; Fountain & Finley, 2011; Pendergrass, Hansen, Neuman, and Nutter, 2003)

Discussion
Implications of this Study

- APR
  - Declaring a major helps academic success
  - More time in school implies higher GPA
    - Closer to graduation
- Main influence of the APR is to set feasible goals for student athletes to make progress towards degree completion.

Discussion
Implications of this Study

- UCO student athletes have improved grade point average since APR
  - the in-school (*M* = 2.69, *SD* = 0.73) is higher than the average GPA of all academic statuses (*M* = 2.44, *SD* = 0.83).
- Academic Clustering
  - Certain Colleges, CB (*M* = 2.13, *SD* = 1.20) and CEPS (*M* = 2.14, *SD* = 1.18) had the highest amount of roster years.
  - Also the higher enrolled
  - Possible implications of academic clustering

Discussion
Limitations

- There has yet to be a study
- Only GPA post APR instatement (Fall 2005)
- Seven teams included
- Demographic information
  - Race
  - Previous academic history
- Coach turnover

Discussion
Delimitations

- Time of 5 years
- GPA and APR
- Division II athletes
- All levels of academic status

Discussion
Recommendations

- Perform study after 10 years (2015) for larger data set and larger view of APR
  - Academic Clustering
- Factors determining declaring a major earlier
- Include demographic factors and previous academic history
- Qualitative Research to supplement findings
- Explore individual majors closer with more variables

Conclusion

- Significant difference ($p < 0.05$) between GPA by male and females
- Undeclared major best illustrates differences
  - Females: higher GPA, lower roster years
  - Males: lower GPA, higher roster years
- Declaring a major may aid in academic success
- Significant differences ($p < 0.05$) in CEPS, CMS and Undeclared colleges
- More research into academic clustering of student athletes

Review

- Purpose of this study was to demonstrate how student athlete's sport and major relate to their grade point average (GPA) at the University of Central Oklahoma.
  - There has yet to be a study relating individual sports team's division of majors and their academic success.
- The author hypothesized females would have a higher GPA than males. The null hypothesis was rejected.
- The author hypothesized there would be academic clustering in student athletes. The null hypothesis was rejected.

Overall

- The academic stipulations are created for student athletes to be successful in college by completing a degree in a timely manner AND successful after college in their career

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