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Attrition-Assimilation Integration: A New Model for Drug Use Among College Students and Policy Recommendations

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ATTRITION-ASSIMILATION INTEGRATION: A NEW MODEL FOR DRUG USE AMONG COLLEGE STUDENTS AND POLICY RECOMMENDATIONS

By

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I owe everything I have accomplished in life thus far to my parents, Joe and Rebekah.
I *literally* could not have made it to this point without your love and support.
I hope the both of you are able to find this educational milestone
treasuring and memorable.
I love you.

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ABSTRACT

Illicit drug use among college students is a well-known phenomenon that has been investigated on numerous occasions throughout the last half-century. Time and time again, research has supported that the single most significant predictor of drug use is the associations, or bonds, that individuals share with their peers, particularly peers that already use drugs (Marcos, Bahr, and Johnson 1986; Kremer and Levy 2008; Werse 2008; Inciardi and McElrath 2015). The purpose of this study is to explore the relationship between peer association and drug use among college students. Employing social learning theory and social control theory to propose a new integrated model to explain drug use, it is hypothesized that peers have a significant effect on a student's likelihood of experimenting with recreational and non-medicinal drugs. A sample of 577 undergraduate students at Arkansas Tech University (ATU) was surveyed about their drug usage and peer relationships. In addition, demographics are explored for their roles as potential predictors of student drug use. This study will provide information regarding the most commonly used drugs among students on the Arkansas Tech University campus, as well as provide information regarding which students are most susceptible to drug use during their time enrolled in the university. Factor analysis and logistic regression are applied to measure the relationship between student drug use and associations with drug-using peers.

Key Words: Social learning, social control, drug use, peer associations, college students, attrition-assimilation integration model, and demographics

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CHAPTER 1
INTRODUCTION AND PURPOSE OF THE STUDY

THE EFFECTS OF SOCIAL LEARNING AND SOCIAL CONTROL ON STUDENT DRUG USE

A multitude of studies over the last few decades supported the notion that adolescents are highly susceptible to drug use. Marcos, Bahr, and Johnson (1986) proposed that drug use among adolescents in America is prevalent. The realization that drug use is so widespread is shared among many other sociologists. They established the notion that further insight must be acquired to gain a greater understanding of the processes that ultimately stimulate drug use throughout the stages of early life among individuals residing across the nation. Research consistently reported that the single most significant predictor of drug use is the associations, or bonds, that individuals share with their peers, particularly peers that already use drugs (Marcos et al. 1986; Kremer and Levy 2008; Werse 2008; Inciardi and McElrath 2015).

Several similar research studies were conducted over the last few decades, but one key characteristic has found itself at the center of many of these studies. The majority of these studies focused on adolescents, particularly teenagers that were in middle school and high school. It is simply not enough just to focus on this age group. It is essential to realize that college students are just as susceptible as middle school and high school students, if not more so, to experiment with drugs for recreational and/or non-medicinal purposes.

College students are arguably the most vulnerable to drug use due to a lax position taken toward such behavior. Individuals who go to college are introduced to a new type of culture and environment that promotes drug use rather than proscribing it.

These individuals, still young and not yet fully mature, see college as an opportunity to forego any sense of responsibility as they slip further from the vigilance of their parents and inevitably face new freedoms one may have never before experienced. These unaccustomed opportunities allow individuals the ability to press limits, often times in the form of using drugs. College students undergo a lifestyle transition which is often times coupled with dependence on drugs according to Ross and DeJong (2008). Ross and DeJong (2008) also suggested that college campuses simply provide the marketing agenda that is ideal for encouraging drug use. They argued that college campuses are weak when it comes to enforcing guidelines at a time when students are vulnerable to pressure and persuasion.

The era spanning the 1960s through the 1990s saw a surge of research conducted based on the interests in understanding drug use. This research study is intended to add to the growth of literature in relation to social learning theory, social control theory, and drug use among college students. This research study shares a similar theme to other drug use studies among college students with two major differences. The first major difference is that it focuses on college students; whereas, previous counts of scholarly research focused on teens that primarily attended middle school or high school. The second major difference is that an overwhelming majority of research along these lines leading up to now was focused on understanding the use of alcohol and tobacco, and to a small degree, the use of marijuana; whereas, this study is interested in studying any and all potentially illegal substances.

Significance of the Research

This study will address two major aspects of recreational and/or non-medicinal drug use, as it persists among college students. The first is to investigate and explain the relationship between peer association and student drug use through the application of social learning theory and social control theory. The study will highlight the influence one's peers may have on an individual's experience with illegally consumed drugs. The second purpose of the study is to explore whether some individuals illegally use drugs more than others and determine which demographic characteristics serve as the best predictors.

Determining the relationship between an individual's illicit drug use and associations with drug-using peers is of interest. The relationship is expected to support the idea that individuals who report drug use can link their usage to increased involvement, attachment, commitment, and belief to other drug-using students around campus. One must acknowledge the affiliations and participation that individuals share with others around campus that potentially influence drug use. A lack of appropriate peer group associations and a withdrawal from active participation with other individuals around campus can impose serious effects on an individual's history with drug use. The study strives to explore whether college students are using drugs illegally for recreational or non-medicinal purposes. It also strives to determine whether an individual's friends reinforce the illicit behavior. In addition, the study will help gain insight into the effects of higher sustainment levels of involvement, attachment, commitment, and belief to peers on the use of drugs through the development and application of the attrition-assimilation integration model.

CHAPTER 2
LITERATURE REVIEW

DRUG USE AND PEER RELATIONSHIPS

Werse (2008) suggested the relationship between individuals who use illicit drugs and the individuals who set the users up with the substances typically represents a friendship or bond built on the basis of trust that serves as a beneficiary factor to both parties. In order for the illicit drug user to maintain a continuous supply of the product of their choice and for the supplier to maintain a continuous customer base, there must be an equal share of trust in the other to not fail one another. This particular insight was backed by Inciardi and McElrath (2015:268) when they argued that illicit drug users will regularly seek out "friends or friends of friends" to score their purchase of a desired substance.

Countless research studies centralized on the theme of drug use among adolescents, and in many instances adolescents as students, were conducted through the 1970s, 1980s, and early 1990s (see for example: Thomas, Petersen, and Zingraff 1975; Kaplan, Martin, and Robbins 1984; and Aseltine, Jr. 1995). This particular study pertains to the use of substances for non-medicinal and recreational purposes among college students; therefore, special attention is shed on the evolution of research that has continued to revolve around such matters. This study intends to investigate, as well as explain, the effects that one's peers are capable of imposing on an individual's experiences with illicit drugs.

Prior research was interested in scoping in on a multitude of factors at once that may influence drug use, such as parental monitoring, parental drug use, and peer

association (see Simons and Robertson 1989). This study is interested in simply learning the significance of an individual's affiliated peers in regards to one's past drug use, the demographics of the individuals most susceptible to drug use during their time in college, and the drugs most frequently used by college students for non-medicinal and recreational purposes. It is understood that many factors are capable of relating to an individual's drug use; however, the interest of the study is to determine whether or not illicit drug use is significantly related to peer association. Potential explanatory variables like authoritarian monitoring become lax as many students move off to college and do not reside with their parents during the academic school year (see Ross and DeJong 2008). With this in mind, the perceived influence of an individual's peers is expected to play more of a contributing role in deviant behavior. The attrition-assimilation integration model was solely designed to test the effects of peer associations and influence on student drug use.

Drug use is perceived to be highest among college aged students. Yet, limited research from the 1970s, 1980s, and early 1990s focused specifically on college student drug use. Many of the prior studies primarily focused on the prevalence rates of drug use among students that were not yet adults, such as middle school and high school students (see for examples: Dembo, Schmeidler, and Koval 1976; and Bahr, Maughan, Marcos, and Li 1998). Studies often stated in their respected methodology sections that samples consisted of junior high and high school students, with ages ranging 11-17. The studies that did take into account the necessity to understand drug use among this cohort often coupled the college student drug using phenomenon with drug use among high school

students (see Simons and Robertson 1989; Heimer and Matsueda 1994; and Measham, Newcombe, and Parker 1994).

If what researchers discovered is accurate, then individuals are most likely to have experimented and begun to cease their drug use throughout their college years (Thomas et al. 1975; Kandel 1991; Johnston et al. 2005). There is a need for research that explores the lifestyles of college students. After all, more and more individuals are continuing to attend college at some point in their life, particularly in the last couple of decades. This increase in the number of individuals attending college is comprised of more non-traditional students now than ever before; college is not just a traditional student concept where individuals phase into it directly out of high school. Individuals grow more susceptible to drug use the older they get. It is conventional to expect the amount of drug use among college students to increase since the student body on college campuses has grown in terms of the average student age.

Selecting Drugs to Explore

Historically, research studies interested in explaining the relationship between an individual's association with others and their drug use have commonly centralized on exploring the use of very specific drugs. The most recurrent drugs probed by researchers have consistently been alcohol, marijuana, and cocaine; particularly the latter two drugs (see Dembo et al. 1976; Ritter 1988; Sell and Robson 1998; and DeSimone 2002). The most popularly used drug, according to Measham et al. (1994), is marijuana-based substances. Fellow researchers concerned with understanding the relationship between one's peer associations and the individual's personal drug use discovered similar

evidence to help support this assessment (see Dembo et al. 1976; DeSimone 2002; Van Ours 2006).

The use of alcohol is paramount to consider for this research study. Alcohol is likely to be the most reported illegally used drug. Although alcohol is available within the mainstream market, its manufacturing, purchasing, and consumption is controlled and limited to individuals ages 21 and older. Therefore, many college students actually do break the law when they purchase and consume alcoholic beverages because most college students will not be the required legal age until some point through their junior year of college. This is perhaps the most solidifying logic behind including alcohol into this study of drug use.

The rationality behind including additional drugs into the study, such as amphetamines, psychedelics, and prescription drugs is, in part, due to the realization that drug use among members of society is constantly evolving (Measham et al. 1994). In today's society, individuals are more exposed than ever before to the use, as well as the approval, of drugs. Drugs tend to undergo boom cycles in which their use exponentially burst onto the scene. Eventually, these pandemics die down only to be replaced by the frenzy and the popularity of the next drug. This is evident in recalling the perpetual cycle that brought prosperity and then infamy to alcohol, then to marijuana, LSD, cocaine, amphetamines, and prescription drugs.

The decision to include alcohol and marijuana in this study was not difficult to make. Intellectuals understand that these two drugs serve as a jump-off point, so to speak. Many would consider them to be "gateway drugs". A "gateway drug", as Merriam-Webster's Dictionary (N.d.) indicates, "is a drug (such as alcohol or marijuana)

that is thought to lead to the use of more dangerous drugs (such as cocaine or heroin)". Many users of alcohol and marijuana do not move on to harder drugs like cocaine, heroin, or amphetamines, but the individuals that have used cocaine, heroin, amphetamines, or similar drugs are much more likely to report prior use of alcohol or marijuana (see Smart and Fejer 1969; Dembo et al. 1976; Kleinman and Lukoff 1978; Measham et al. 1994; Bahr et al. 1998). Alcohol, marijuana, and cocaine were also selected to be observed in this study in order to maintain consistency that has existed within similar studies throughout the decades. In doing so, it will be possible to make a comparison in the analyses and the results of this study with the analyses and results of previous works that have sustained their rightful places in academic literature.

Amphetamines and methamphetamines were included after gaining insight into the local area's struggles against these drugs in recent years. The River Valley Meth Project of 2007 was orchestrated in an attempt to rid the communities surrounding Arkansas Tech University of methamphetamines. The River Valley Meth Project consisted of mailed household surveys, as well as interviews with community members and arrestees, which highlighted the festering consequences of methamphetamine manufacturing, distribution, and consumption. The project was carried out by faculty members employed by Arkansas Tech University (ATU) during a time in which the drug's presence was on the rise and was causing a large scale commotion across the area (see Huss, Earnest, and Wilkerson 2006).

Prescription drugs were also included in the study because of perceived use/abuse of such drugs in recent years by college students. The intention is to turn this anecdotal information into reliable empirical data. The decisions to use these drugs made by many

college students that invest time into the party scene, as well as pulling all-nighters to study for exams, have left them in more danger than they realize in recent years. Kolek (2006) acknowledged that particular prescription drugs are indeed used for their ability to serve an array of purposes. These purposes mentioned ranged from "recreational" use to "study aids" (Kolek 2006:20).

Some drugs are much more commonly used among college students today. These drugs include hydrocodone, oxycodone and Oxycontin, Xanax, and Adderall (Kolek 2006). These prescription drugs most suitable for college students are stimulants that serve as uppers for each individual's perceived prerogative. There is a need to understand the severity of prescription drug use as it continues to popularize.

Kolek (2006) stated that very little insight had been accredited to understanding the boom that left high numbers of illicit prescription drug users among the college student population. Kitzrow (2003) attributed the growing masses of prescription drug users at institutions of higher education to the pharmaceutical industry. She argued that practitioners diagnosed so many adolescents with disorders and diseases that could be cured with their products, regardless of any attempts to validate such assessments.

Prescription drugs are difficult to understand due to their legal status. The use of prescription pills is only illegal for individuals who were not prescribed those substances. Therefore, a distinction must be made while investigating the effects of peer group association particularly on drug use for non-medicinal and recreational purposes. Keep in mind that the interest of the study is in past illicit drug use only, not current drug use or legally prescribed use.

SOCIAL LEARNING THEORY

Differential association was initially its own theory when the Sociologist Edwin Sutherland originally proposed it in full detail in 1947. However, as the field of sociology expanded, the findings, the works, the literature, and the definitions included within the theory of differential association were subjected to further study. In time, the idea was shared that differential association was actually a component of a larger explanation for particular behaviors. This is where social learning theory came into play. Though initially suggested by Albert Bandura and Richard Walters (1963), the idea of social learning as it relates to differential association was developed by Robert Burgess and Ronald Akers (1966) as an attempt to more adequately explain criminal and deviant behavior in society. Akers later labeled social learning theory as an applicable theory to better understanding the process that takes place among both pro-social individuals and antisocial individuals (see Akers and Jensen 2006).

Social learning theory, as it applies to criminology and the endeavor to generally explain deviant behavior today, was first constructed in the 1960s by Ronald Akers. Akers (1966) expanded upon Sutherland's theory of differential association by suggesting that the associations individuals share with others vary based on the constituents involved in each relationship. He proposed that discrepancies in the affiliations with various individuals were a characteristic of something larger at work within society. Akers' work concerning social learning theory connected a general theory of learning with explicit units of behavior. He applied the notion that individuals learn to behave the way they do from the social situations in which they find themselves. Just as the normal behavior of pro-social individuals is explained by characteristics that define, support, enhance, and

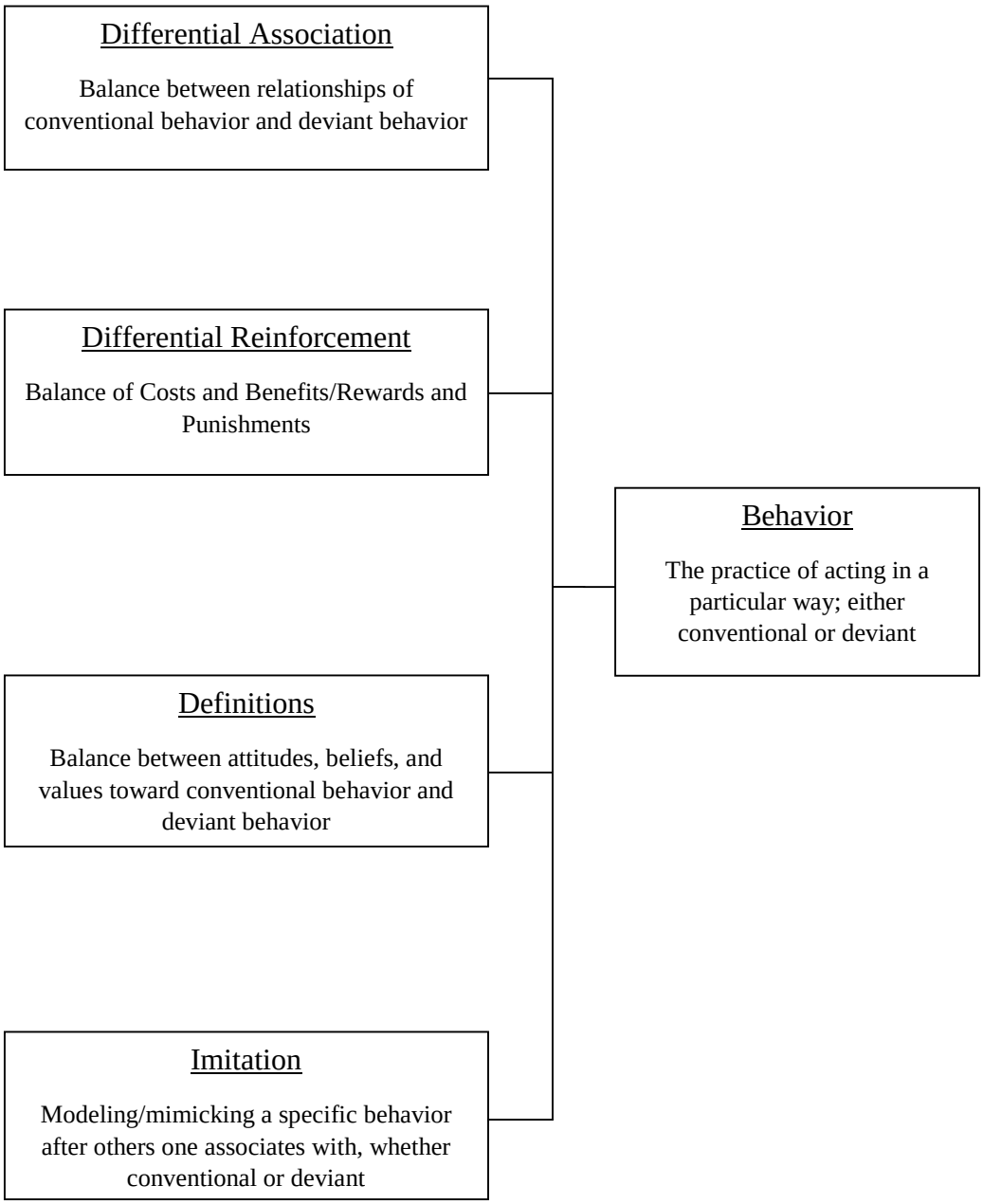
provoke inline behavior, deviant behavior is also characterized by these particular elements.

Illegal use of drugs among college students is the type of deviant behavior under investigation. There is an interest to determine the factors that ultimately contributed to this type of behavior even when individuals inevitably understand the lackluster appeal of their actions. The significance of introducing social learning theory and applying it in this research began with its ability to explain how criminal or deviant behavior is the product of teaching/learning scenarios that derive from unique and personalized interactions among individuals. When attempting to fundamentally breakdown social learning theory in order to understand it in its most basic term, its connotation is the discrepancies that vary in the way an individual affiliates with various other individuals and/or groups within society (see Siegel 2004).

Individuals are certainly susceptible to being influenced by an array of factors within society. Whether the source is people in face-to-face interactions, people in the media, or images or writings left behind for others to see, the realization that individuals and their behaviors are prompted by a continuity of infinite sources is asserted throughout the entirety of one's life. However, it is understood that individuals are most vulnerable to the influences of people that are readily available to carry out interactions with these beings through physical associations. The capacity to interact directly with others provides for a more intimate gain in doing so. Individuals acquire four critical elements that propel connectedness, supply purpose, and support the validation of relevance through the intimate interactions individuals share with others via direct contact. This process happens whether individuals are consciously aware of it or not. These four

elements are the concepts that coordinate and help create the meaning of social learning theory as Akers intended it to be in order to accurately portray deviant behavior, specifically drug use. Stewart (2010) identified the key concepts used to explain how deviant behavior is learned, as well as sustained, through the utilization of the terms differential association, differential reinforcement, definitions, and imitation.

Figure 2.1
Social Learning Theory Model



Differential Association

Differential association in relation to social learning theory identifies the different levels of bonding an individual shares with particular others. Differential association refers to the balance of relationships you have with others that share similar beliefs and behaviors with you and the relationships you have with others that do not share similar beliefs and behaviors as you do. Differential associations "provide the major social contexts in which all the mechanisms of social learning operate" (Akers and Sellers 2008). In other words, the associations that you share with individuals shape and reiterate the other three components included in social learning theory. People are able to experience reinforcements for their behavior, acquire definitions such as meanings, attitudes, and beliefs that they lacked prior to their association, and eventually imitate the behaviors that they witness and become supportive of through the associations they have with other individuals. This applies to both pro-social beings and deviants.

Definitions

Definitions are a second characteristic related to social learning theory. People begin to familiarize themselves with the attitudes and beliefs of those they surround themselves with by associating with select individuals or groups (Alston, Harley, and Lenhoff 1995). Attitudes and beliefs open the way for attachment and commitment to introduce themselves to particular individuals or groups; therefore, maintaining an individual's existence with their peers. Individuals that diverge more freely from the contextual societal norms are more susceptible to acting out with deviant manners. Lacking the will, desire, or capacity to adhere to the conventional, mainstream societal beliefs and practices ultimately impacts the probability of participating in deviant behavior in a way that is costly to the individual and the statuses and roles they fill in

society. The more an individual is led to perceive the definition of a specific form of behavior as positive or advantageous to their greater good, the more probable the individual is to act out the behavior (Stewart 2010). This is true regardless of whether the individual's behavior is conforming to constructed norms or conforming to deviant customs.

Differential Reinforcement

Differential reinforcement serves as a third condition of social learning theory. It is the measure of mechanisms that support and/or demean particular behavior. Stewart (2010) defined differential reinforcement as "the balance of perceived rewards and punishments consequential to a behavior." Reinforcement for one's chosen behavior is affected by the potential gains or losses that are stimulated by the attitudes, beliefs, and definitions they acquire from the individuals with whom they associate. An individual is more likely to initially perform a certain behavior, as well as repeat the action, when the opportunity for personal gains or advancement outweighs the costs of being discovered for that particular behavior. The idea of reinforcement in relation to social learning theory and behavior is centered on the notion that rewards and punishments exist for deviant and conventional behavior, both.

Imitation

The fourth and final criterion of social learning theory is imitation. Imitation is created when an individual models their own behavior after that of others (Stewart 2010). Behavior is initially witnessed and then imitated by people. Imitation is the act of mimicking a new behavior that was recently procured. Stewart (2010) proposes that imitation is more likely to affect the transition into a behavior one has never before

experienced, but that it is still possible for imitation to reflect the sustainment of a behavior.

Individuals are susceptible to mimicking the behavior of others. Said behavior is supported by the cost-benefit analysis each individual performs, whether conscious of it or not. The individual is led to believe that the way they are behaving is beneficial to them and has something more holistic to offer them than would be available if they were to function in an opposing manner. These reinforcements are spelled out for individuals in the definitions provided to them by the other individuals with whom they are connected. The definitions serve as an underlying basis, or ideology, that offers certain actors a sense of identity through articulate reasoning. All of these are products specifically a part of associating with select others (Akers and Sellers 2008). These characteristics become accessible by associations shared with others.

Social Learning Theory and Drug Use

Akers and colleagues (1979) conducted research that examined the aspects of social learning theory as they relate to alcohol and marijuana use. Their study supported the notion that "both marijuana and alcohol abuse are strongly related to the social learning variables" (Akers et al. 1979:650). All four of the social learning theory characteristics were strongly related to drug use. Of the four, the differential association of individuals to others in society appeared to be the most influential one. Akers et al. (1979) suggested that their data would empirically support the idea that social learning does indeed explain the use of drugs by young adults. They also stated that their findings provided evidence that social learning variables explain forms of deviant behavior other than just drug use.

Throughout the years, social learning theory has been an overarching principle that has remained applicable to studies with primary motives in dealing with drug use (see for examples: Akers et al. 1979; Dull 1983; Marcos et al. 1986; Alston et al. 1995; Jacobson 2004; Siegel 2004; Akers and Jensen 2006; Akers and Sellers 2008; and Stewart 2010). Stewart (2010) also applied social learning theory to behaviors such as underage drinking. This research stated that differential association between an individual and their constituents was the most profound predictor of consuming alcoholic beverages. This information echoed what previous research had said for more than four decades. With this being nearly unanimous, it makes sense to explore the possibility that the outcome may hold true for individuals that use other substances illegally. Marcos et al. (1986) acknowledged the realization that delinquent behavior and delinquent peer associations are highly correlated with, and the idea is universal. Individuals that use drugs are most likely to report doing so because of group experiences they underwent.

Dull (1983) proposed that social learning, particularly the aspect of differential association, is the most insightful theoretical perspective with concerns of explaining illicit drug use, as well as deviance in general. He claimed that understanding the intricacy of an individual's familiar relationship with others was the key to explaining how and why individuals develop a proclivity for drug use. The research study being executed develops immensely from an attempt to measure the degree of inclusion and investment into each respondent's intimate peer groups, just as Dull (1983) enacted through his study.

In 2004, Jacobson conducted a research study concerned with the effects of youth cohort size on adolescent drug use. She discovered that the prevalence of drug use was

ever-increasing, in stride with the growth of the youth population. However, it was mentioned that drug use alone appeared to reflect the increase in youth cohort size over the last couple of decades; rates of suicide and violent crimes appeared to remain unaffected by the growth of the youth population. Jacobson brought attention to what she referred to as "scale economies". She proposed that drug use among adolescents was impacted by the overall population of these individuals' cohorts in a couple of different ways. First, Jacobson suggested that the increase in cohort size ultimately created the opportunity for more individuals to become exposed to the subculture of drug use. With an increased demand for the drugs that are sold at a fixed rate, the expense paid forth by each user is lessened, thus propelling individuals to buy more of a product. Second, she suggested that the overall growth in the youth cohort size gave way to more would-be drug users due to the strain implemented on society's resources that attempt to monitor, alleviate, and punish the use of substances. Jacobson stated that "the relatively fixed slots for incarceration may necessitate police turning a blind eye to the drug trade. By lowering the probability of getting caught, such congestion would affect users by raising the net benefits of consumption, or dealers by lowering total supply costs" (Jacobson 2004:1493).

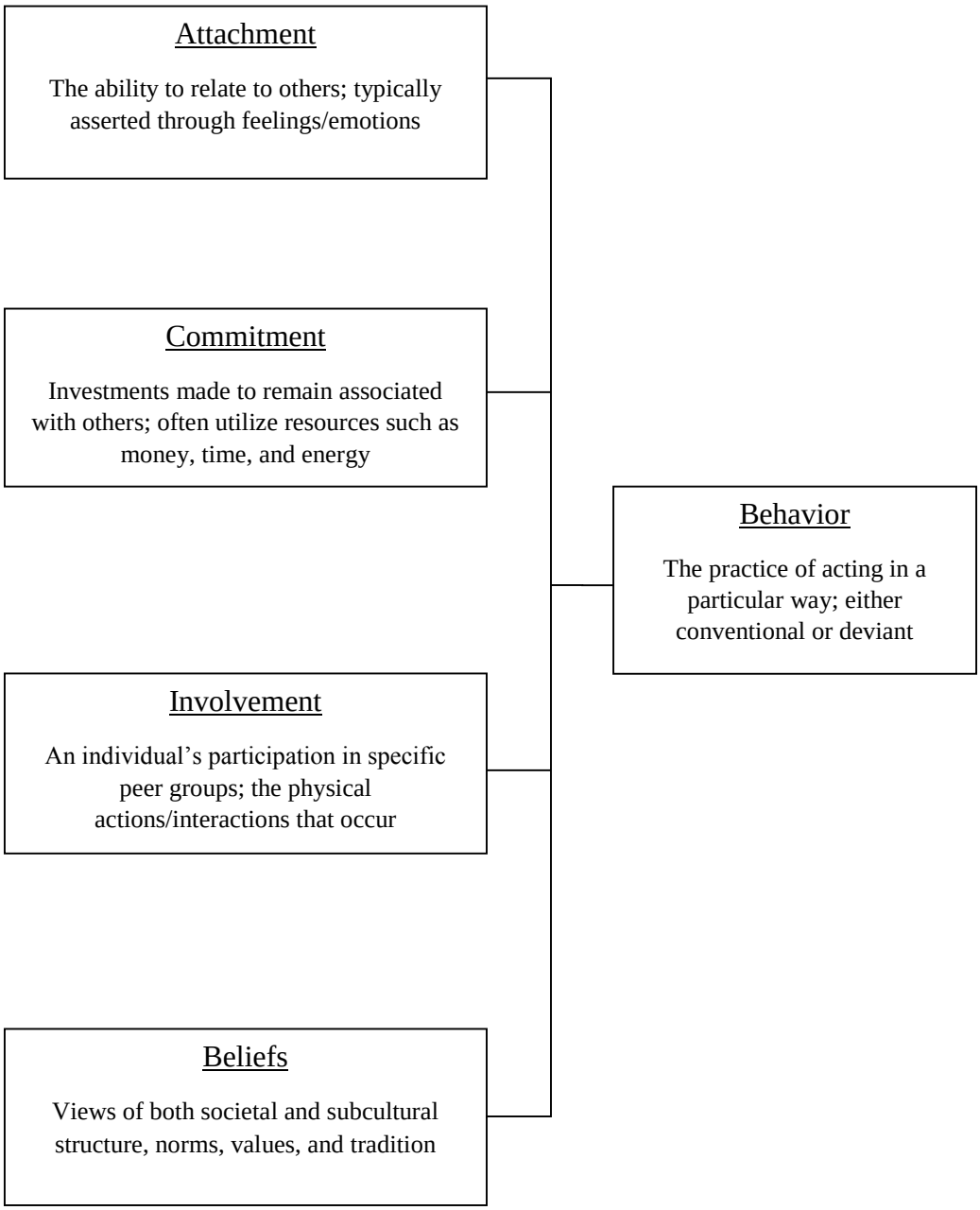
SOCIAL CONTROL THEORY

Four decades after Edwin Sutherland first conceived the significance of social learning, Travis Hirschi (1969) attempted to explain the causes of delinquency. His theory of social control suggested that all individuals are potential delinquents or criminals; however, many would-be offenders are deterred from behaving in a way that ultimately sets them up as the opposition to mainstream societal norms. The sanctions

posed against a would-be offender, if caught in their behavior, carries the capacity to strip an individual of their relationships with fellow members of society such as friends, family, and coworkers. Only when the bonds formed between an individual and the rest of society's members are stressed and become weakened, or even nonexistent, is an individual more likely to take part in irregular behavior.

The relationships that individuals share with others vary according to the observed constituents. Consider, for example, the relationship one may have with their sibling that they encounter on a day-to-day basis versus the relationship an individual may have with their distant cousin they only see come Thanksgiving and Christmas time. The people that an individual associates with on a more frequent basis tend to have lasting impressions on the individual, therefore, having a more substantial impact on the behavior of the individual. Hirschi's social control theory goes much more in depth than just simply stating the bonds that exist between groups of individuals play a significant role in their behavior, regardless of whether the behavior follows or breaks social norms. Much like social learning theory, social control theory emphasizes characteristics that define, support, enhance, and provoke deviant behavior, such as the illicit use of drugs. Introducing social control theory and applying it to this research study is important because the theory explains how deviant behavior is the product of the relationships one shares, or the lack thereof, with other individuals instilled throughout society. Hirschi focused his explanation for the cause of delinquency around four critical concepts - attachment, commitment, involvement, and belief.

Figure 2.2
Social Control Theory Model



Attachment

Attachment is the understanding an individual is capable of sharing with others through an ability to relate to them (see Alston et al. 1995). The absenteeism of attachment leads to feelings of indifference, which then stimulate reclusiveness and uncertainty about others inhabiting one's surroundings. Behavior that aligns with the societal norms necessitates attachment to individuals that share similar behaviors. People that share strong ties of attachment to pro-social people tend to take into account the costs and the benefits that may result from participating in deviant behavior, such as drug use. Individuals with weak or no significant attachments to others remain relatively oblivious to the consequences that may result from one's ill-willed actions. Individuals refuse to accept authority figures for who society labels them as if the individual inadequately embodies the significance of attachment to social establishments. When attachment is evaded, deviant behavior will ensue (Wiatrowski, Griswold, and Roberts 1981; Alston et al. 1995; Siegel 2004).

Commitment

Commitment relates directly to the investment an individual allocates to their bond with significant others, such as family members and friends (see Alston et al. 1995). Commitment is measured by the amount of resources exhausted in the attempt to maintain adequate social ties to other individuals, as well as to societal institutions. It includes resource capital, social capital, cultural capital, and human capital. The most observable resources bestowed upon these bonds include time, money, energy, and skills. Hirschi (1969) depicted the concept of commitment in a way that represented a balance beam, so to speak, between an individual's level of commitment to conventional society and their likelihood of behaving in deviance. Individuals who invest more of their

personal capital into remaining pro-social and complying with societal norms through resources like money, time, energy, and acquired skills are inherently less likely to falter and submit to antagonistic behavior than their less invested counterparts. People that have constructed a firm commitment to conventional behavior are less likely to engage in deviant behavior due to all they have to lose if their participation in deviant acts was discovered by others. People who invest a substantial amount of their own resources into orthodox behavior jeopardize all that they have worked for if they ever decide to act in opposition to traditional standards. The decision made by an individual to forego their vested interest in fulfilling their social obligations transpires into the diffusion of one's commitment overall. This ultimately increases one's vulnerability to risk-taking conditions such as drug use, while eliminating their sight on future aspirations (Wiatrowski et al. 1981; Alston et al. 1995; Siegel 2004).

Involvement

The third key characteristic of Hirschi's social control theory is involvement. Involvement pertains specifically to an individual's participation in society's pragmatic roles (see Wiatrowski et al. 1981 and Alston et al. 1995). The extent to which an individual is involved within society, along with the quality of one's involvement, has a significant influence on the individual's likelihood of behaving in a delinquent manner. "Large amounts of structured time spent in socially approved activities reduce the time available for deviance" (Alston et al. 1995). The time spent towards being involved in pro-social undertakings ultimately eliminates any possibility of participating in deviant like drug use. Thus, the individuals who invested so much of their own resources through their commitment and attachment to remain intact with societal expectations are

far less tempted to risk their position for meaningless acts of criminality or deviance. Siegel (2004:229) suggested an individual's involvement in conventional endeavors serves as an insulator towards "the potential lure of criminal behavior".

Belief

The final social control variable perceived to contribute to an individual's bonds is his or her beliefs (see Wiatrowski et al. 1981; Alston et al. 1995; and Siegel 2004). When Hirschi (1969) addressed the significance of an individual's beliefs, he stressed the importance of understanding how accepting an individual is of the overarching social norms, values, and traditions. He proposed measuring a person's beliefs by determining his or her perception of society's moral validity. Individuals found to be supportive of the orthodox social expectations are less likely to venture from this straight path than their less supportive counterparts that have a tendency to either question or rival society's conventional pastimes. Wiatrowski et al. (1981:525) suggested that an individual's belief in the significance of accepting the "social rules is central to social control theory". Individuals who see themselves as being free of the constraints of society's rules are more likely to eventually disregard and overstep these boundaries. All of the attachment, commitment, and involvement one undergoes throughout the entirety of their relationships directly influence their learned beliefs. For example, individuals learn that drug use is widely unappealing on a social scale, but the attachment, commitment, and involvement, or the lack thereof, strays them into a state of disregard.

While Hirschi (1969) did an excellent job explaining the elements that exist within the social bonds an individual maintains, there is one possibility that needs to be addressed. Travis Hirschi (1969) noted that delinquency may ensue once an individual

shows detachment towards social conformity and resents, or at least insufficiently acquires, the appropriate degree of attachment, involvement, commitment, and belief to refrain them from committing acts of deviance. He discussed how a lack in each of these components was capable of driving an individual into deviance. This finding was echoed by the works of subsequent researchers (see Wiatrowski et al. (1981), Alston et al. (1995), and Siegel (2004). Alston et al. (1995) and Siegel (2004) implied that the lack of bonding that exists between an individual and their family, friends, and coworkers, who function as integral parts of society, increases the likelihood of the individual using drugs. However, they do not specifically address the bond an individual may share with deviant others that may already use drugs. It is not just a lack of these characteristics that stimulate an individual's participation in illicit behavior, such as drug use. In fact, it is actually possible that attachment, commitment, involvement, and belief devoted to the deviant subculture influence an individual's likelihood of committing deviant acts. It is not only weakened bonds, or a lack of bonds entirely, in conventional activities that urge people to execute transgressions against conventional social norms. Perhaps strong bonds that already exist between an individual and others that are currently divulged as beings of a deviant subculture influence the individual to grow in support of the deviant behavior. This particular research study takes into account both of these possibilities that may serve as avenues for college student drug use.

Social Control Theory and Drug Use

Little research conducted in past years explored the relationship specific to social control theory and college student drug use (for exceptions see Thomas et al. 1975; Sell and Robson 1998; and Caboni et al. 2005). It is a common assessment that one's peers

act as the most significant predictor and influence in determining the likelihood of drug use among individuals. However, not much research has been conducted to observe the "control" aspect of this behavior. More often than not, research centered on the investigation of college student drug use has taken the social learning theory or differential association approach to explain the phenomenon. The application of social learning explores and explains peer association and peer influence through perception; whereas, the application of social control possesses the capability of exploring and explaining peer association and their influence through measurable degrees.

Hirschi (1969) intended to place emphasis on peer influence in a manner that accredited deviant behavior to an inadequate relationship shared between an individual and their intimate others rather than to a strengthened bond formed with individuals already practitioners of the unconventional behavior. This is where social learning is able to thrive, as it attempts to explain how individuals may become drug users by explaining the possibility of an imbalance that places deviant cohorts in suitable favor of attracting an individual. Social control, as Hirschi (1969) initially intended, does not account for significant bonds with unconventional others; instead, it simply addresses the significance of conventional bonds one lacks. Social control theory explains what is absent from an individual that ultimately leads them towards deviance, not what is present that motivates them to behave unconventionally (Aseltine, Jr. 1995).

Kaplan, Martin, and Robbins (1984:271) propose, "Deviant behavior results from the erosion of emotional ties to important agents of socialization that restrained the subject from committing deviant acts." Social control operates in a way that alleviates the individual's desire to act out one's own self-interest. When an individual chooses to

venture from conformity and to use drugs, they have lost sight of their commitment to maintaining the societal norms and put in hindsight the concerns of those that remain committed to preserving society as a conformation. Kaplan et al. (1984) proposed that the sanctions imposed by those that remain normatively intact lose sustenance over those that have decided to detour from conventional behavior when this occurs.

Caboni and colleagues (2005) actually insisted that researchers take serious consideration in contemplating the investigation of the deviant subculture of drug use that attracts a large percentage of college students during their years enrolled in institutions of higher education. They emphasized that students learn about particular behaviors, beliefs, and attitudes during their time in school. All of these conditions create patterned norms or standards that have a tendency to develop within individuals and transition them into situations that they learn to accept and support, like drug use. "When enforced, norms also facilitate group survival; clarify the identity of a group, and assist a group in avoiding embarrassing interpersonal problems" (Caboni et al. 2005:520). Once an individual decides to abandon a conventional lifestyle in order to identify with an unconventional subculture, the individual must do what is demanded of them in order to remain a part of something larger than themselves, the cohort with whom they have come to associate. Failure to uphold one's end of an arrangement with their cohorts could certainly entail condemnation or even exile, which would then result in a sort of limbo where they would be the "odd man out". This status would prevent one from identifying with the individuals existing as part of the subculture, as well as the socially conformed individuals. Individuals faced with this situation abused what was provided to them

through the unconventional associations and it is unlikely they would be easily accepted back into conventional society after their drug use had been discovered.

This research study intends to fill a void in academic scholarship by adding to the minute literature that currently accounts for the relationship between college students and drug use, particularly from the social control perspective. Doing so shall only further legitimate the realization that one's peers do, indeed, have significant effects on an individual's susceptibility of ever using drugs.

SIGNIFICANCE OF USING BOTH THEORIES

Using social learning theory and social control theory to explain drug use among college students makes it possible to explain the influence that peer associations impose on taught/learned behavior through similar variables that merely possess different names (see Figure 2.1 on page 13 and Figure 2.2 on page 20). This research study aims to integrate social learning theory and social control theory in order to explore and explain the relationship that exists between the use of drugs among college students and these students' peer associations with friends that have also used drugs. Prior research, such as that carried out by Marcos et al. (1986) and Matsueda and Heimer (1987), danced around with a similar agenda. However, the research of these two studies did not take into account social learning theory as a whole; they simply applied one variable of social learning theory when they applied differential association. Instead of integrating social learning theory and social control theory, Matsueda and Heimer (1987) studied differential association theory and social control theory in order to theoretically explain how broken homes may influence delinquency among blacks and whites. Marcos et al. (1986) were interested in adolescent drug use; however, their path model included

parental attachment, religious attachment, and educational attachment all in addition to relationships held with drug-using peers. Meanwhile, this study explores the potential behind applying social learning concepts, which partially encompasses differential association, and social control concepts. Each theory's variables will be applied to explain the significance of an individual's peer associations with drug-using friends, and this alone. There will be no other factors (for example parental attachment or familial involvement) present in this research study, unless included as a single indicator of an overarching social control variable within the survey.

While each theory shares similar qualities in relation to their theoretical characteristics and concepts, one important matter stands out; social control theory is comprised of elements that are more concrete; whereas, social learning theory entails elements that are more abstract. Therefore, the characteristics of social control theory, which are involvement, attachment, commitment, and belief, have the capacity to be more readily measured. However, as each element brought forth via social learning theory relates to each of the elements presented by social control theory, social learning theory gains the capacity to vicariously explain college student drug use. Social learning and social control are reinforced through social interactions.

Each of the four social control variables exists only because the other three do. Involvement, attachment, commitment, and belief are all co-interacting aspects of peer group association that function simultaneously. The same goes for social learning theory; all four components exist as a part of a larger whole. As previously stated, the use of each theory is paramount in order to investigate, understand, and explain the effects of peer associations on an individual's experiences with illicit drugs. Though each theory is

similarly applicable to this research study, the variables related to social control theory will be those measured for statistical purposes.

As mentioned above, social learning theory and social control theory may be used to explain similar phenomena but identify key concepts differently. Therefore, it is necessary to acknowledge which characteristics of social learning theory match up with the characteristics of social control theory. By doing so, the effects of peer association on an individual's personal drug use may be explored, understood, and explained theoretically, as well as empirically. The decision to apply two separate theories, one being more theoretical and abstract and the other being more empirical and concrete, to one phenomenon will ultimately result in the growth of sociological literature relating to the two theories and how they explain college student drug use.

Throughout data collection and analysis, the four key conceptual terms accounted for by social control theory (attachment, commitment, beliefs, and involvement) will be utilized. Readers will be able to clearly identify each of the four key concepts (differential association, differential reinforcement, definitions, and imitation) of social learning theory through the observation of social control theory's measurable characteristics. Note that social learning theory should be observable in the frequency, intensity, priority, and duration an individual exerts in maintaining peer associations.

Differential association is comparable to attachment. The voidance of attachment that results in reclusiveness from certain peers causes an imbalance in association with these individuals. Attachment and differential association describe the formation of peer bonding. The individual acquires a degree of intimacy, sensitivity, and sentiment towards their relationships with peers through differential association and attachment.

Differential reinforcement and commitment are alike in terms of their contributions to peer association. These two characteristics account for the balance between costs and benefits that extend social bonds. Social learning theory addressed the idea of gains and losses, rewards and punishments, but it is social control theory that supplies the capability to measure these through the resources exhausted or acquired through specific affiliations in order to keep them intact. Differential reinforcement and commitment measure the extent to which an individual will go in order to maintain their social connections with peers.

Definitions and beliefs are remarkably similar in theory. Beliefs, according to social control theory, influence an individual's overall general acceptance of social norms. According to social learning theory, beliefs are one element of many that are encompassed within definitions. Definitions, in this instance, are comprised of beliefs, along with attitudes and traditions. One's beliefs are stimulated by the beliefs, attitudes, and traditions of those surrounding them. Beliefs and definitions, both, explain the importance of an individual's decision to discount societal standards for the betterment of a deviant subculture. Definitions and beliefs relate to the extent in which an individual will succumb to the norms, attitudes, and behaviors of their peers.

Finally, the characteristics of imitation and involvement are compatible. Imitation occurs when an individual mimics the behavior of those with whom they associate. Involvement is identified as an individual's acting participation in a particular behavior. The more an individual is around others that use drugs, the more susceptible they become to witnessing the act of one using, which then leaves the individual more vulnerable to accepting the behavior and experimenting with drugs themselves. Imitation and

involvement are summed up as the physical process of carrying out a particular behavior. They are measured by the extent in which an individual will participate in a given behavior, as well as how likely and how frequently they are to repeat the behavior.

This brief description of each theory's characteristics supports the notion that compatibility exists across theories. The objective was to signify the interrelatedness in the effects of social learning and social control on college student drug use. Its clarity and comprehensiveness to future readers and researchers is anticipated.

Marcos et al. (1986:135) stated that "the best single predictor of drug use is association with drug-using friends." They also suggested that the process of becoming involved with the consumption of drugs is relatively similar regardless of drugs observed. Marcos et al. (1986) attempted to explain the process of adolescent involvement in drug use by creating a model centralized on the theories of differential association and social control. Their goals were to (1) unmistakably provide a study that was clearly guided by theory; (2) provide research in an area that had not yet received a lot of attention by applying the concepts of social control theory; and (3) to distinguish evidence that illuminates the typical process in which young individuals ultimately become involved in the use of drugs by understanding the drug's availability and legal status, as well as the acceptance of the drug's use by one's peers. This particular study led to the conclusion that there is theoretical overlap between the characteristics specific to social control theory and social learning theory, calling the elements of each theory "Siamese twins" (Marcos et al. 1986:141). All of this taken into consideration helps perpetuate the importance of the current research.

ATTRITION-ASSIMILATION INTEGRATION MODEL

Again, the purpose of this study is to explore and explain the relationship between college student drug use and associations with drug-using peers through the application of social learning and social control theories. As previously stated, the two theories share very similar compositions, but there is a lack of clarity in the literature regarding how these perspectives work together. Therefore, it would be beneficial for a new integrated model, which uses these two theories, to exist. This section introduces such a model.

After researching theories that relate to the peer influences on crime and deviance, the creation of a specific "integrated" model is fitting. Scant literature exists, that combines social control and social learning. Elliott, Huizinga, and Ageton (1985) and Gottfredson and Hirschi (1990) come the closest to succeeding. The work of Elliott and colleagues (1985) integrated strain theory, differential association theory, and control theory. It placed emphasis on the preliminary existence of some sort of social strain, which then resulted in differential association and the rejection of orthodox social standards (Forsyth and Copes 2014). Gottfredson and Hirschi's (1990) work integrated concepts of social control theory and rational choice theory. It suggested that individuals with low self-control (low levels of involvement, commitment, attachment, and/or belief) ultimately make decisions that result in instant gratification (Forsyth and Copes 2014). In other words, individuals who are deviant are rational, self-interested, and greedy. While both of these models supported the idea that there is possible success in combining theories to explore and explain deviance and crime, they both failed to adequately integrate concepts that have the ability to explain the relationship between college student

drug use and college student peer associations. Thus, the new model introduced here is of value and contributes to existing literature on theory integration.

Social learning theory builds on the acknowledgement that individuals discover specific behaviors and ultimately learn to choose acts of crime or delinquency over orthodox practices due to their associations with already deviant individuals. Social control theory thrives on the notion that individuals become deviant when they choose not to conform to traditional behaviors. The inherent concept of social control theory proposes that individuals who choose to relinquish full involvement, commitment, attachment, or beliefs, or any mixture of these four characteristics, to mainstream behaviors and society become susceptible to drug use. Thus, it is believed that a lax position towards any of these characteristics provokes deviance within an individual. It is critical to understand that an individual may also align their involvement, commitment, attachment, and beliefs with the deviant behaviors of unconventional individuals. According to both theories, individuals waive the acceptance of conventional behavior, such as choosing not to use drugs. The conceptualization and the operationalization of the two theories, in regards to explaining peer association and drug use, can quite literally be described as mirror images of one another. With these points in mind, the new model was developed. It is labeled the Attrition-Assimilation Integration Model (see Figure 2.3 Page 36). The terms “attrition” and “assimilation” were selected due to their generalizable relatedness to social control and social learning theory.

Social control theory relates the inception of deviance to the weakening of ties (weakening of attachment, commitment, involvement, and belief) to conventional society (see Hirschi 1969; Siegel 2004; and Forsyth and Copes 2014). This is why the term

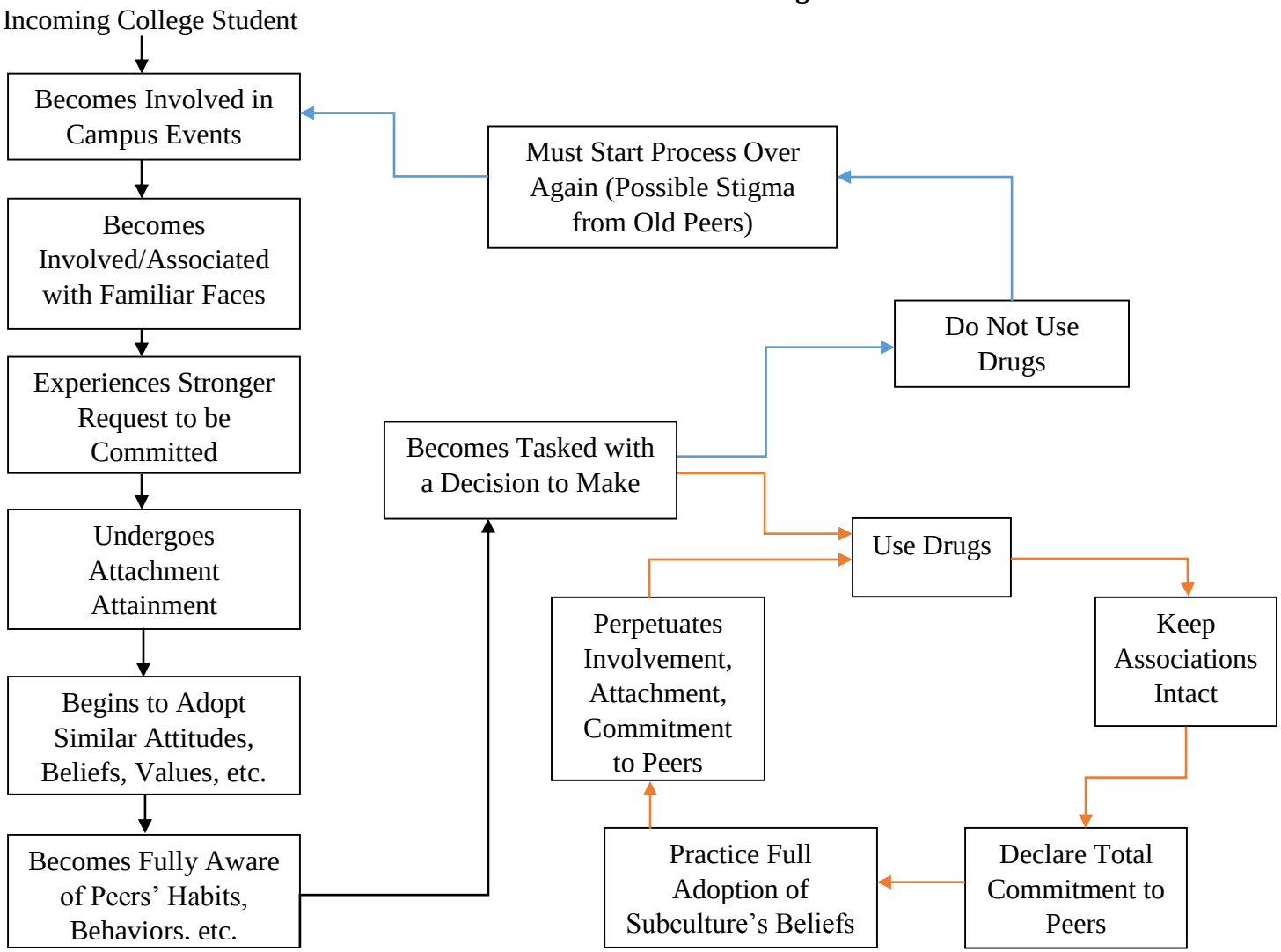
"attrition" was chosen. It represents social control. Attrition is defined as "the action or process of gradually reducing the strength or effectiveness of someone or something through sustained attack or pressure" (Google N.d(b).). Merriam-Webster (N.d(b).) defined attrition as "the act of weakening or exhausting by constant harassment, abuse, or attack."

Social learning theory postulates that people learn to behave deviant throughout life experiences and social interactions, especially through the experiences and interactions shared with deviant individuals, rather than being born predisposed to deviant behavior. This concept facilitated the inclusion of the "assimilation" term into the model as a way to represent social learning theory. Merriam-Webster (N.d(a).) provided several applicable definitions for the term assimilation. The popular dictionary described assimilation as the process "to adopt the ways of another culture" and as a way "to absorb into the culture or mores of a population or group". Google (N.d(a).) defined assimilation as "the process by which a person or persons acquire the social and psychological characteristics of a group".

The "integration" aspect of the model being used came from the combination of the two theories that, together, form one overarching theme. Together, the model applied the two theories in a way that may adequately explain the process of conforming to deviant behavior. The use of the term "integration" in the model's name suggests that the relationship between an individual's drug use as a college student and their peer associations, particularly the associations with drug-using cohorts, may be best explained through the consolidation of the two theories.

The amalgamation of the two theories into one model makes it possible to apply the conceptual characteristics of social learning theory and social control theory in a way that will facilitate a better understanding of college student drug use and peer associations with drug-using cohorts. The attrition-assimilation integration model was developed specifically to explain drug use as impacted by peer associations. However, it should be applicable to investigations between peer associations and other forms of deviant behavior.

Figure 2.3
Attrition-Assimilation Integration Model



SOCIAL DEMOGRAPHICS

Demographics are characteristics possessed by individuals within a given population that provide others with a mental image of an individual without ever having to physically see them. Sage Publishing (2010) states that, "Demographic information provides data regarding research participants and is necessary for the determination of whether the individuals in a particular study are a representative sample of the target population for generalization purposes." Social demographics operate as independent variables in the collection and analysis of research data because of their ability to be explanatory variables.

Gender

Gender was first looked at as a demographic variable related to illicit drug use in the early 1980's (Anderson 2001). When it comes to gender, the discrepancy between males and females, in regards to drug use, increases with age. (Kandel 1991:378) discovered, "For most substances, a higher proportion of men than women are users". Johnston et al. (2005) found that there were "consistently lower levels of binge drinking, marijuana use, and daily cigarette smoking for women when compared to men" (as cited in Duncan, Wilkerson, and England 2006:698). One piece of literature even went on to say that the proportion of those who have ever experimented with an illicit drug is 45 percent higher among men than among women. Therefore, the prevalence rate of illicit drug use is expressed significantly more by men. According to Suchman (1968:149), "males are almost three times as likely as females to be using drugs at least once a week." Another study conducted by Tu, Ratner, and Johnson (2008) looked at the gender differences of adolescents' cannabis use. In their study, female and male heavy users

were more likely to report poorer economic status and frequent use of alcohol and tobacco. It was also observed that about the same percentage of males and females had used cannabis, however, girls used it less often (Tu et al. 2008).

Men report almost twice the amount of illicit drug use as women do according to the National Household Survey on Drug Abuse (NHSDA) (Anderson 2001). The differences reported by the NHSDA tended to differ depending on the exact substance. For instance, cocaine use showed a much higher difference between use by gender than alcohol (a legal drug for individuals 21 years of age or older). Gender socialization was suspected to be the cause of a larger proportion of this difference (Anderson 2001). This finding also supported other findings that suggested the development of drug use and addiction is different for males and females (Toray et al. 1991). These gender differences in development can reflect family bonding differences, as well as psychological differences. All of these differences, however, do not lead to a large difference in age of first illegal drug use (Toray et al. 1991). Some studies, however, found very little influence of gender toward marijuana use in particular (Kandel et al. 1976). While literature surrounding the likelihood of males and females ever experimenting with illicit drugs varies from source to source, it is conclusive that males tend to sustain usage of substances for recreational and/or non-medicinal purposes.

Race/Ethnicity

It was discovered by Mensch and Kandel (1988a) that reporting rates of illicit drug use differed among observed racial/ethnic groups. According to them, "blacks appeared to be more likely than other ethnic groups to underreport their infrequent use of illicit drugs" (Mensch and Kandel 1988a:371). The two reemphasized this finding by

further stating in their study that "self-reported drug rates by blacks may be subject to greater underreporting than self-reports by other ethnic groups" (Mensch and Kandel 1988a:397). Whites tend to experiment more with illicit drugs than African Americans, and Hispanics fall in between the two. However, African Americans have a higher probability of maintaining their use of illegal drugs. In a 1976 adolescent involvement article, "whites" reported the least amount of illicit drug use, then "blacks", and last was "other" race; however, the numbers of "whites" in the survey far outnumbered the other categories by more than 800 cases each (see Kandel et al. 1976). Kandel (1991) found that black and Hispanic women report lower rates of marijuana use than white women. Kandel (1991) also found that when observing men, ethnic differences tend to appear only with illicit drugs other than marijuana.

Kleinman and Lukoff (1978) argued that the racial/ethnic discrepancies between African Americans and Caucasians drug use was not as significant as many might initially calculate. In fact, they collected evidence to support the idea that the amount of drug use by individuals, particularly the use of marijuana, was strikingly similar given their potential differences in race or ethnicity. They even suggested that Caucasians "are more likely than American blacks to use other illicit drugs, alone or in conjunction with marijuana" (Kleinman and Lukoff 1978:194). This study also found that blacks are more likely than Caucasians or Hispanics to use drugs intravenously. Many of the differences between racial/ethnic groups regarding illegal drug use can be traced to different lifestyles and backgrounds. Kleinman and Lukoff (1978) suggested that non-white individuals are typically perceived in a manner that grossly over-represents their use of illicit substance, especially heroin. Through the contributions made by an array of

studies focused on understanding the racial and ethnic differences in drug use, it was concluded that transitions often occurred directly between marijuana and heroin, particularly by African Americans. A progressive process was an adequate way to analyze the drug using history of Caucasians, as there was a consistency in which many started with marijuana and progressed through various substances such as hallucinogens and then amphetamines (Johnson 1973; Single, Kandel, and Faust 1974; Kleinman and Lukoff 1978). Several characteristics, including the type of drug being used and the form of intake (i.e. inhaling, snorting, or injecting), must be taken into consideration when attempting to understand which individuals are most susceptible to drug use based on race/ethnicity.

Religious Attendance

Families, friends, and religious organizations tend to be the main groups that help adolescents and adults form morals and values associated with drug use (Bahr et al. 1998). When religious groups are looked at specifically, a trend emerges. Most research supports the idea that being involved in a religious group tends to shield one from drug use (Hadaway, Elifson, and Petersen 1984; Bahr et al. 1998). This has been researched heavily, especially for alcohol and marijuana use. Prior research focused on two major areas; religious affiliation and religiosity (Bahr et al. 1998; Forthun et al. 1999). The current research study focuses on religiosity as measured by the frequency of religious attendance.

There are two types of religiosity; private and public. Private religiosity entails activities such as personal prayer and adherence to religious doctrine. Public religiosity includes activities such as an individual's attendance of worship services and

participation in religious group activity. Although these two measures are not necessarily related at all times, they are highly correlated (Bahr et al. 1998). Religiosity is noted for having a fairly independent effect on drug use, though its effects vary depending on the substance (Forthun et al. 1999). In his work, Suchman (1968:149) reported, "Atheists and other religious affiliations reported much more use than Protestants and Catholics." Church attendance is an influential factor on the likelihood of drug use for non-medicinal or recreational purposes. The more frequently an individual attends religious meetings, the less likely they are to report the use of drugs.

Nock (1998) found evidence to support the notion that there is, indeed, a correlation between drug use and attendance in religious services. He stated that individuals who were married reported (a) stronger patterns of consistency in their attendance of religious services and (b) decreased allotments of time specifically designated to their friends that allowed them to frequently visit settings that promoted risky, unhealthy, substance using behaviors. Further research conducted just a few years later by Bachman et al (2002) supported Nock's findings with the conclusion that church attendance did actually affect an individual's use of substances negatively. This negative relationship stated that as one variable increased, the other decreased. Religious attendance tends to assert feelings of disapproval toward illegal drug use within individuals.

A growing body of literature and professional research studies evolved over the last couple of decades that related specifically to the effects of one's religious affiliation, religious activities, and religiosity on an individual's use of illegal drugs, according to Bahr and colleagues (1998). Bahr et al. (1998) found evidence to support the notion that

one's overall religious experiences, whether private or public, tends to have an impact on their drug use. Jessor (1976) derived a very similar assessment of the effects an individual's religiosity has on their drug use. He found that there is a negative relationship that exists among the association of drug use and religiosity, suggesting that religious identity, affiliation, and practices ultimately drive down the likelihood of drug use. With this, it was concluded that "nonusers had high religiosity and drug users had low religiosity" (Bahr et al 1998). This inverse relationship was evident among countless research studies spanning over the last two decades. Religious participation may be regarded as a preventive measure in terms of eradicating illicit drug use. Not only is there evidence to support the idea that an individual's religiosity decreases their likelihood of participating in drug use, but it also decreases the likelihood that the individual will associate with substance using peers (Bahr et al. 1998).

Class Standing

This demographic was designed to account for the discrepancies in reported drug use among students based on their year in school. Class standing was distinguished through the use of interval categories comprised of individuals that were classified as: freshmen, sophomores, juniors, seniors, and super seniors (individuals enrolled for 5+ years). It was conceptualized that the longer an individual remained in college, the more likely they were to use drugs illegally. After all, upperclassmen would have received greater lengths of exposure to such deviant behavior. According to previous research, individuals practically reach the peaking age, with respect to drug experimentation, roughly around the same time they expect to be exiting college with a degree (Johnston et al. 2005). Prior research suggested that the most amount of drug use occurs among

individuals leading up to this age. However, there is relatively zero literature that distinguished rates and patterns of drug use based specifically on the number of years one has been a student. The lack of substantial research relating to class standing does not take away from the little research that did contribute to understanding the relationship between this social demographic and the individual's drug use.

Thomas et al. (1975) did attribute the probability of a college student experimenting with illicit drugs partly to the amount of time the student spent enrolled at an institute of higher education. They briefly stated that "older students, more than younger students" seem to report personal experiences related to drug use. Thomas et al. (1975) continued to support this finding by addressing the process in which all students become exposed to upon entering a college or a university. Throughout the course of a student's enrollment, they learn to adopt the values, beliefs, traditions, and behaviors that ultimately portray the relics of those that were students before them. The incoming student, whether consciously aware of the process or not, becomes susceptible to acquiring the practices of the student subculture.

SUMMARIZING THE LITERATURE

Drug Use and Peers

It is widely accepted that peers are the most influential factor in determining whether or not an individual uses drugs. Individuals are most vulnerable when they are at a young age; therefore, the intensity to understand just how susceptible students are to drug use is heightened. In a society that is reaped on by pharmaceutical companies, it is important to understand that some drugs are indeed legal with the proper prescription. However, this study is strictly interested in learning about the use of drugs by college

students for non-medicinal and recreational purposes. The objective is to determine which drugs are used the most by the college students enrolled in courses at one particular university campus. Reflecting back on how easy it is to go to the doctor and claim a prescription, it is crucial to determine if prescription pills are gaining popularity among students that seek only to abuse them. With student enrollment on the constant rise nation-wide, and particularly among the university used to draw the study's sample, cohort size may potentially affect the overall prevalence rates of drug use. Marijuana, cocaine, heroin, amphetamines, methamphetamines, prescription drugs, and alcohol are among the list of drugs to be observed in this study. Although consumption of alcohol is legal, it is still a controlled substance that demands its purchasers and users be a minimum 21 years of age and many college students are young adults that are 18, 19, and 20 years of age. Thus, their consumption of alcohol would officially be regarded as the use of an illicit substance.

Theory

Social learning theory and social control theory were chosen to explore and explain student drug use because each theory includes four notable concepts that are compatible with the concepts of the other theory. To observe one concept, it must be possible to observe the remaining three concepts of each theory. One theoretical concept may not be accounted for if any of the other three do not exist. Even more noteworthy is the amount of evidence that exists from prior research and literature that investigated how each of these theories worked to explain the effects of peer association on college student drug use. The four characteristics observed under each theory are quantifiable; therefore, the balance between an individual's levels of engagement into society's conventional

behaviors and their degree of engagement in deviant behaviors can be measured and analyzed in an attempt to detect a relationship that exist between the variables.

Though the theories are quite similar in terms of explaining drug use and how it is able to persist, it is still paramount to be able to identify the characteristics appropriate to each theory. Social learning theory includes differential association, differential reinforcement, definitions, and imitation as its four key elements to explaining the process that ultimately invokes individuals into the subculture of drug use. Social control theory is comprised of involvement, attachment, commitment, and belief that function together to explain the process of using drugs. One stark contrast exists between the two theories applied through this research study. Social learning theory is often understood as a theory capable of examining deviance as a differential balance that weighs in favor of antisocial behavior over conformist behavior. It inherently attributes drug use to a learning process in which deviant principles are expressed. Social control theory argues that deviance persists when an individual simply does not receive adequate orthodox norms, values, traditions, beliefs, and attitudes, or when an individual ceases to accept these orthodox standards as personal guidelines and adopts alternative morals and ethics. It inherently attributes drug use to a weakening of conventional social bonds. However, it is argued that drug use may be accredited to reinforced, even possibly overzealous, social interactions, experiences, and associations.

The construction of the Attrition-Assimilation Integration model serves to strengthen the validity of applying social learning theory and social control theory to explain the causation of drug use. Scarce literature exists, that combined control and social learning. The new model was created to apply the concepts of social learning

theory and social control theory in a way that will facilitate a better understanding of the relationship between college student drug use and peer associations with drug-using cohorts. The model was designed so that it may be applicable to future investigations between peer associations and other forms of deviant behavior.

Social Demographics

Most information concerning demographics was drawn from past research relating to a topic much like that of this study, one that is concerned with exploring and explaining the relationship between the peers a college student associates with and the prevalence of drug use among college students. The demographic characteristics discussed were selected based on their potential significance in understanding which college students are the most susceptible to illegal drug use during their time spent enrolled in an institution of higher education. The demographics investigated in this study were selected based on expected effects perceived to play a role in an individual's overall likelihood of experimenting with drugs for non-medicinal/recreational purposes. Evidence from previous research was available to illustrate the most significant demographics in relation to a person's drug use. Not all studies found the exact same results regarding social demographics; however, the compilation of studies did indicate consistencies throughout literature. These consistencies function as an instruction guideline for later research to serve as a starting point in terms of what is likely to be significant, or not significant, in relation to one's drug use. Many previous researchers placed emphasis on several of the same demographics. Thomas et al. (1975:63) stated, "Although there are inconsistencies in the reported findings, the probability of drug experimentation and subsequent regular use seems to be related to a number of social

backgrounds and demographic characteristics." Thomas and his constituents discussed the most commonly explored demographics. They are, in no particular order, a respondent's reported gender, race and ethnicity, age, religious affiliation and religiosity, marital status, and political identity. The decision to include the class standing demographic was made based on a gap in literature that does not readily identify it as a characteristic that impacts an individual's likelihood of using drugs. This additional demographic is quite unique to the study's sample and overall population.

HYPOTHESES

The hypotheses function as testable statements in exploring, understanding, and explaining how college students become invested in drug use for recreational and/or non-medicinal purposes through the application of social learning theory and social control theory. The hypotheses are as follows:

The recreational and/or non-medicinal use of drugs by college students can be predicted through the application of the attrition-assimilation integration model's variables. The level of involvement, attachment, commitment, and beliefs in deviant peer group behavior that is reported by an individual will help predict which students have the greatest risks of using illicit drugs.

- Reported experiences with drugs for recreational and/or non-medicinal purposes will reflect reported levels of involvement in one's peer associations
- Reported experiences with drugs for recreational and/or non-medicinal purposes will reflect reported levels of attachment to one's peers
- Reported experiences with drugs for recreational and/or non-medicinal purposes will reflect reported levels of commitment to one's peers
- Reported experiences with drugs for recreational and/or non-medicinal purposes will reflect reported beliefs in the attitudes, traditions, and behaviors of one's peers

The reported use of drugs for recreational and/or non-medicinal purposes among college students will vary in relation to each respondent's reported demographics. It is hypothesized that the following characteristics will have significant effects on drug use:

- Gender
- Race/Ethnicity
- Religious Attendance
- Class Standing

The student's experiences with drugs are expected to be influenced by one's peers when the individual associates with friends who have previously used illicit drugs. Individuals who report any of the following information are believed to be the most susceptible to peer-induced drug use:

- "I feel like I am now more open-minded towards drugs use than I was when I started college."
- "My friends have impacted my opinion on drug use."
- "My friends made me use drugs whenever we were together."
- "Individuals that use drugs are victims of social pressures that are deserving of second chances."
- "I have friends that have used drugs before."
- "I have used drugs before. (Alcohol is a drug)"
- "I have used drugs since becoming friends with my current friends."
- "I have used drugs because my friends initially introduced me to drugs."
- "I have experienced influences from my friends to use drugs."
- "My friends have directly influenced my use of drugs."
- "My friends and I have used the same drugs."

CHAPTER 3
METHODOLOGY

THE CURRENT STUDY

This chapter focuses on the theories, models, and analytical methods used to perform this research study. First, a model developed to connect social learning and social control theory is explained. It is important to note the limited production and use of integrated models in theories that explain why individuals conform to deviance. Next, research questions and hypotheses are provided. The methods used to collect data and measure the model's concepts are included, along with population and sample information. Then, details pertaining to the dataset are available. Problems found in the pilot survey are included, as well as how these problems were corrected prior to sending out the revised survey. Variable coding is also provided. Last, the methodology section includes the specific analyses used to explore the relationship between drug use and peer associations among college students.

THEORETICAL CONTEXT

This project adopts the conceptual frameworks of Travis Hirschi's (1969) social control theory and Ronald Akers' (1966) social learning theory to explain deviant behavior. The goal is to identify an integrated model that may be used to better understand the relationship between recreational and/or non-medicinal drug use among college students and the peer associations that students share with their drug-using cohorts. This study is founded on the notion that students who share strong associations with drug-using friends are more susceptible to experimenting with illicit substances. The creation of the attrition-assimilation integration model reasons that both

theories previously referenced are needed to sufficiently explain the rationality of deviant behavior. Social control theory provides the concepts (attachment, commitment, involvement, and belief) that may be more easily measured. Social learning theory acknowledges the significance of accounting for the frequency, duration, priority, and intensity of one's attachment, commitment, involvement, and belief in deviant and/or conventional behaviors. Hirschi (1969) used social control to explain an individual's weakening bond in the attachment to, commitment to, involvement with, or belief in mainstream society. However, social control can explain the reinforcement of an individual's bonds in the attachment to, commitment to, involvement with, and belief in a deviant subculture. The social control, or "attrition", aspect of the proposed model focuses on whether or not an individual experiences a weakening in the attachment to, commitment to, involvement with, or belief in conventional behavior due to experiencing stronger attachment, commitment, involvement, and belief in deviant behavior. Meanwhile, the social learning, or "assimilation", aspect of the model concentrates on identifying the number, extent, quality, and type of interactions that college students may have with their drug-using peers (see Cullen, Agnew, and Wilcox 2014). The model suggests that the more a college student is exposed to other students who use drugs, the more likely they are to be attached to, committed to, involved with, and believe in their behaviors.

Drug use among college students is perceived to be the consequence of a social subculture on university campuses that uses the exposure of non-users to current users. Whether or not the non-user ever experiments with drug use for recreational and/or non-medicinal purposes is influenced by the level of involvement, attachment, commitment,

and belief in the associations they share with their drug-using peers. This is different from what Hirschi (1969) reported. He reported that social control resulted in higher levels of involvement, attachment, commitment, and belief to conventional society. However, he did not take into consideration the effects of sustained involvement, attachment, commitment, and belief to the contrasting side of society; the part of society that participates in deviant behavior like drug use.

Reports of drug use vary from one individual to another depending on the individual's personal experiences. Numerous research studies performed over the last three decades of the twentieth century signaled that there is significance and great concern in understanding deviant behavior (see for examples: Thomas et al. 1975; Dembo et al. 1976; Dull 1983; Marcos et al. 1986; Simons and Robertson 1989; Aseltine, Jr. 1995; Bahr et al. 1998; and Sell and Robson 1998). Nearly two decades after that era, there is a need to fill in the literature with up-to-date research. Times have changed. More people are attending colleges and universities. Even the popularity of specific drugs has appeared to come and go. Attitudes and knowledge change with the historical context of drug use (see Swidler 1986). Drug use remains at the forefront of many community-based tribulations. It seems as though drug use, in one fashion or another, has played its part in the social realm of American culture for the better part of a century. Peer groups that use drugs possess certain skills and serve particular agendas that are culturally produced, and that may sustain the appeal of a drug using subculture among the youthful individuals. A model generated through the integration of multiple theories makes this need plausible to achieve. The attrition-assimilation integration model created and proposed in this research study is comprised of four fundamental concepts:

1. Attachment – There must be some level of attachment to others that are deviant (drug users). This attachment represents the overall association to the peer group one identifies with.
2. Commitment – There must be some level of commitment to the deviant peer group one associates with. The concept of commitment is perpetuated through the rewards an individual obtains through their association with the deviant subculture. For commitment to remain strongly intact, the rewards and benefits must outweigh the costs and punishments. Commitment may be measured by the extent to which an individual will go to pledge their allegiance to their peers.
3. Belief – There must be a degree of belief held by the individual that they behavior they are participating in is acceptable and advantageous, or at least not detrimental. The individual must feel as if they are not sacrificing anything through their association with their peers. The beliefs serve as a justification for one's actions, even though they may be seen as the practice of a tainted behavior.
4. Involvement – There must evidence of involvement with a peer group. Involvement is measured by the physical practices of exerting a particular deviant behavior, namely drug use. Involvement supports an individual's claim of attachment, commitment, and belief to the behavior of the peers one associates with. It may be seen as the full embodiment of a specific deviant act.

An individual who exemplifies all of these characteristics is the most susceptible to drug use. Also, the strength of one of these concepts tends to be reflected in the strength of the others.

RESEARCH QUESTIONS AND HYPOTHESES

A proper understanding of how and why many college students experiment with drugs must be attained in order to account for relationships that may exist among peer associations, demographic characteristics, and illicit drug use. Understanding the relationship may also help determine which students are most likely to use drugs during their college careers, as well as help determine which drugs are most commonly used by students to this date. Variation in the priority, frequency, duration, and intensity of one's associations with drug-using peers are perceived to create situations in which students are made overly susceptible to drug use. Variations in reported drug use also may be impacted by a respondent's social demographics. If associations with drug-using peers

influence whether a student ultimately experiments with controlled substances, then the concepts accounted for by the attrition-assimilation integration model should be applicable to measure and explain the effects of such associations. The theories and the integration model become value-added when others understand how they fit into the relationship between student drug use and peer associations. Once the relationship of interest has been comprehended, the capacity to rectify previous limitations in literature presents itself.

The theories discussed throughout the previous sections helped generate research questions that are significant to this particular study. These questions then helped guide the construction of the hypotheses.

- To what extent may peer associations be used to predict student drug use?
- To what extent may the concepts of the attrition-assimilation integration model be applied to predict the relationship between college student drug use and associations with drug-using peers?
- Do reports of recreational and/or non-medicinal drug use vary based on reported demographics?

Two hypotheses were constructed to test potential effects of peer associations on student drug use through the application of the attrition-assimilation integration model.

1. Higher reports of association with drug-using peers will increase the likelihood of college students ever experimenting with drugs, recreationally and/or non-medicinally. Reported levels of involvement, attachment, commitment, and beliefs to one's drug-using peers will be applied to measure this relationship.
2. A student's demographics will influence the likelihood of them ever using drugs for recreational and/or non-medicinal. The following demographics will act as effects in the relationship:
    - Gender
    - Race/Ethnicity
    - Class Standing
    - Religious Attendance

Reports of drug use, as well as peer influence to do so, are expected to vary based on demographics. Reports of drug use due to associations with drug-using friends are expected to vary based on the levels of attachment, commitment, involvement, and beliefs that each respondent shares with their drug-using peers. Also, the attrition-assimilation integration model is expected to reliably measure the effects of associations with drug-using peers on college student drug use when all of these concepts are applied to the relationship.

DATA AND METHODS

The population is a mid-size rural university in Arkansas. Cluster sampling was used to identify respondents in Introductory Sociology and General Psychology courses, which are required general education courses that all degree seeking students must enroll in during their enrollment at the university. In total, 587 surveys were completed and returned. Of the 587 participating respondents, ten students selected the option stating "I choose NOT to submit my survey response as part of the research study." The surveys were administered across two academic semesters. A pilot survey was administered at the close of the fall 2015 semester, which accounted for 200 of the 577 usable surveys. A revised survey was administered at the beginning of the spring 2016 semester, which accounted for the remaining 377 usable self-report surveys.

Demographic Characteristics

Table 3.1—Demographics for the Sample and the University

Gender	Sample	Population Fall 2015	Population Spring 2016
Male	36.60%	45.47%	45.30%
Female	63.30%	54.52%	54.69%
Race/Ethnicity	Sample	Population Fall 2015	Population Spring 2016
Caucasian/White	71.20%	75.49%	75.57%
African American/Black	15.90%	9.41%	8.90%
Non-resident Alien	N/A	3.96%	4.30%
Native American/Alaskan Native	0.70%	0.63%	0.62%
Asian/Pacific Islander	2.30%	1.22%	1.21%
Hispanic/Latino	6.40%	6.00%	6.13%
Hawaiian	N/A	0.05%	0.06%
Middle Eastern	0.70%	N/A	N/A
Other (please specify)	1.40%	3.19%	3.17%
Class Standing	Sample	Population Fall 2015	Population Spring 2016
High School Student	N/A	16.40%	5.23%
Freshman	49.60%	28.79%	33.44%
Sophomore	23.90%	15.38%	18.11%
Junior	14.90%	16.36%	17.22%
Senior	9.00%	23.05%	25.97%
Super Senior (5+ years)	2.40%	N/A	N/A
Attendance of Religious Services	Sample	Population Fall 2015	Population Spring 2016
At Least Once a Week	32.60%	N/A	N/A
Two or Three Times a Month	18.20%	N/A	N/A
Several Time a Year	19.10%	N/A	N/A
Once a Year	7.30%	N/A	N/A
Do Not Attend Religious Services	22.70%	N/A	N/A

Population demographic statistics for gender, race/ethnicity, and class standing from the university student demographic records are provided. Sample demographic statistics for these three demographics are also provided, along with religious attendance. These demographics were selected due to their place in previous literature relating to drug use (see Smart and Fejer 1969; Thomas et al. 1975; Dembo et al 1976; Dull 1983; Sell and Robson 1998; DeSimone 2002; Collins and Ellickson 2004; Duncan et al. 2006; Huss et al. 2006; Van Ours 2006; Arkansas Tech University 2015; and Arkansas Tech University 2016).

Survey Design and Administration

The survey consisted of 31 close-ended questions that accounted for 194 variables. There was a total of 196 items by the time the comments section and the survey version (pilot or revision) were included. The survey conceptually made up four sections. The first was comprised of 14 demographic questions. The second section included six questions that focused on the four theoretical concepts being applied. The next nine questions focused specifically on drug use. The fourth quadrant of questions asked two series of questions about legal reprimands, such as arrests and/or fines, of oneself and their peers, and also about substance use/abuse counseling services provided through the university.

1. Demographics – These questions focused on gender, year born, marital status, employment status, race/ethnicity, attendance of religious services, political identity, class standing, traditional/non-traditional student, high school friends that attend the university, living arrangement, roommate situation, and living situations (a total of 14 questions; 23 total items).
2. Theoretical Concepts – These questions focused on involvement in campus events and with intimate others outside of campus events, attachment to one's friends, commitment to one's friendships, and beliefs about drug use (a total of 6 questions; 81 total items).
3. Drug Use – These questions focused on information pertaining to drugs used by the respondent's peers, personal drug use, perception towards the availability, as well as popularity of illicit drugs on the Arkansas Tech University campus, whether certain drugs should be decriminalized, and what drugs an individual believed to be gateway drugs (a total of 9 questions; 84 total items).
4. Legal and Professional Outreach – These questions focused on the legal reprimands experienced by oneself and by one's peers for drug related issues, whether or not the respondent had any friends drop out of college due to drug related issues, whether the respondent ever participated in the D.A.R.E. program as an adolescent, and focused on substance use/abuse counseling services (a total of 2 questions; 6 total items).

The dataset included a multitude of items consistent with existing research on peer associations and student drug use, as well as how social learning and social control

may be applied to the particular relationship. Demographics specific to the population were also included so a better understanding of the population could be derived.

Subsequent to Institutional Review Board (IRB) approval, the survey was administered to social sciences courses ranging from introductory level up to graduate level. Response rates were very high; 577 out of 590 potential respondents opted to participate in the study. This is, in part, due to the administration of surveys in person. Below, a full list of courses that were surveyed is provided.

Figure 3.1—List of Course Titles Surveyed

Introductory Sociology	Statistics for the Behavioral Sciences	Sociology of Gender
General Psychology	Research Design for the Behavioral Sciences	History of Social Thought
Introduction to Criminal Justice	Social Deviance	Social Stratification
Crime and Delinquency	Communities	Minority Relations
Sociological Theory		

Minor revisions were made after administering the pilot survey. The first item on question 22 initially read, "I have used drugs before." After the revision it read, "I have used drugs before. (Alcohol is a drug)" It was clarified because numerous students who responded to the pilot survey indicated that they had not used drugs before, but on the very next question they reported that they used alcohol. When asking whether or not the student had ever used alcohol before in questions 22 and 23, "(before turning 21 years old)" was included in the revisions because the consumption of alcohol before age 21 is illicit. A revision needed to be made to question 27 as well, but not one that would change the scope of the question being asked or the potential responses. After the pilot survey had been administered, it appeared as though several students had misinterpreted the term "decriminalized". Therefore, the term "legalized" was included in parentheses to assist respondents in comprehending the intent of the question.

MEASURES OF DEPENDENT VARIABLES

The dependent variable in this research is identified by reports of drug use among college students for recreational and/or non-medicinal purposes. The use of drugs is the outcome, which is contingent upon levels of other variables. The reported use of drugs may experience ebbs and flows as various manipulating factors are introduced.

General Drug Use

The general drug use questions related to the use of drugs by the respondent and/or their peers. The question focused on personal, general drug use asked students to indicate whether or not each of the following statements applies to them by answering either "Yes" or "No" to statements such as "I have used drugs before. (Alcohol is a drug)"; "I have used drugs *since* becoming friends with my current friends."; "I have used drugs because my friends initially introduced me to drugs."; and "I have experienced influences from my friends to use drugs."

Specific Drug Use

These questions were included to gain insight into which drugs are most commonly used by Arkansas Tech University (ATU) students. Respondents were asked to indicate whether or not they had ever used any of 12 specific substances for recreational and/or non-medicinal purposes since enrolling in courses at ATU. Respondents were provided two possible answer choices. They could report "I Have **NEVER** Used This Drug Before" or "I Have Used This Drug Before". Below, the 12 substances accounted for in the study are listed.

Figure 3.2—List of Specific Drugs Observed in the Study

List of Specific Drugs
Marijuana
Crack or Powder Cocaine
Amphetamines or Methamphetamines (e.g. speed, crystal meth)
Valium (without a prescription)
Heroin
Hydrocodone (without a prescription)
Oxycontin or Oxycodone (without a prescription)
Xanax (without a prescription)
Adderall (without a prescription)
LSD or other Psychedelics (e.g. shrooms)
Ecstasy or MDMA
Alcohol (before turning 21 years old)

MEASURES OF INDEPENDENT VARIABLES

It was hypothesized that an individual's association with their peers on the university campus would play a significant role in the individual's experiences with illicit drugs. Since drug use has already been declared the dependent variable in the relationship, the peer associations one shares with their cohorts served as the independent variable of the correlation. Application of the attrition-assimilation integration model allowed the relationship to be tested and observed. A respondent's reported gender, race/ethnicity, class standing, and religious attendance were also independent variables.

The four concepts of social control theory (involvement, attachment, commitment, and beliefs) measured by the proposed model are discussed, along with the four concepts (differential association, differential reinforcement, definitions, and imitation) of social learning theory. The reason for the attrition-assimilation integration model was to more holistically explain the relationship that exists between associations with drug-using peers and reported drug use among college students.

Involvement

Involvement was measured using two separate responses sets; one for involvement in university sponsored events on campus or in the community and the second one for involvement with intimate others, such as friends, roommates, and neighbors. Both response sets served to quantify the frequency of involvement shared between the respondent and other students. A scale was created that provided a range of answers for each statement.

- The first involvement question asked respondents to indicate how frequently they attend a multitude of events on the university campus during any given week. Fifteen types of events were included within the response set. Respondents were asked to respond to each by using a Likert scale with potential responses ranging from "Never" to "Almost".
- The second involvement question asked respondents to indicate how frequently they participate in 12 tasks with their friend(s), roommate(s), or neighbor(s) during any given week at ATU. Respondents were asked to respond through the use of a Likert scale, which from "Never" to "Almost".
- The inclusion of the involvement variable was used to determine if heightened involvement with peers and cohorts on the university campus ultimately leaves them predisposed to ever using drugs for recreational and/or non-medicinal purposes.

Attachment

Attachment was measured using the answers of 15 relatable statements. It helped to understand how college students connect to their peers, as well as the intensity in which they share these feelings of attachment and connection. Sensitivity, emotion, and intimacy were all characteristics of this attachment concept. The response set was designed to determine whether a pattern exists that may support the idea that a relationship occurs between feelings of attachment to one's peers and personal experiences with drug use.

Some of the statements characterized strong feelings of attachment and inclusion, while other statements characterized weaker feelings of sentiment and attachment towards others. Some statements even reflected not feeling any sense of attachment to others or inclusion of outsiders. It is certainly possible that individuals who did report the use of illicit substances since coming to the university attempt to keep themselves distant from other individuals that do not share similar deviant behaviors. The attachment question asked students to indicate the extent to which they agreed or disagreed with several statements. A Likert scale was created, which provided responses that ranged from "Strongly Disagree" to "Strongly Agree".

Commitment

Commitment was measured using the responses to 13 statements. It was measured based on the answers students gave to statements regarding sacrifices, devotions, and feelings made for the good of preserving peer associations with fellow students. The question asked students to indicate the extent to which they agreed or disagreed with several statements. A Likert scale was created, which provided responses that ranged from "Strongly Disagree" to "Strongly Agree".

Students that report a strong level of commitment to their peers and report that they agree or strongly agree with many of these statements may find themselves at risk to become involved with drugs if their friends already use drugs and the individual wants to maintain their relationships and associations. Acting otherwise may stigmatize the individual, the peers, or both if commitment to one another becomes faulty and a state of discrepancy in viewpoints and in behaviors arises.

Beliefs

Beliefs were measured through the use of two response sets. Students were asked to indicate to what extent they agreed or disagreed with a series of statements.

- The first question about beliefs related to drug use and peers who use drugs. This response set was comprised of six statements that addressed basic beliefs, ideas, attitudes, and traditions towards drug use. Using a Likert scale, responses ranged from "Strongly Disagree" to "Strongly Agree".
- The second question focused on beliefs concerned the community, the university, and laws. It asked student to respond to twenty statements by indicating the extent to which they agreed or disagreed with a series of statements. This question and response set was geared towards identifying more in-depth feelings and beliefs held by the respondent about the individuals who use drugs, the surrounding community's approach to dealing with student drug use, the university's approach to handling drug use among students, and the laws written and exercised to counter drug use. Students who used drugs were more likely to be accepting of others who have used drugs, were more tolerant of the circumstances, believed in laxer laws, and were likely to desire community assistance rather than condemnation and incarceration. Using a Likert scale, responses ranged from "Strongly Disagree" to "Strongly Agree".

Reported Demographics

The student's demographics were independent variables also, as they were expected to influence the likelihood of one ever using illicit drugs. Specific demographics were selected based on their consistency in prior research relating to drug use.

- *Gender* – Options included male or female.
- *Race/Ethnicity* – Possible responses included African American, Asian/Pacific Islander, Hispanic/Latino, Native American/Alaskan Native, Caucasian, Middle Eastern, and Other (please specify).
- *Class Standing* – Possible responses included Freshman, Sophomore, Junior, Senior, and Super Senior (5+ years).
- *Religious Attendance* – Possible responses for attendance of religious services included attendance at least once a week, two or three times a month, several times a year, once a year, and do not attend religious services.

Reports of Peer Associations that Influence Drug Use

Numerous statements embedded throughout the survey concerned peer influences on student drug use for recreational and/or non-medicinal purposes. These statements students were asked to respond to signify the true relationship being explored through this research study. There were eleven total statements that were created to ask respondents about the effects their peer associations imposed on their experiences with illicit drugs. These eleven indicators were distributed throughout the survey. Possible responses varied by question. Some required the respondent to select from the options "Yes" and "No" while other questions required the respondent to select from the choices "Strongly Disagree", "Disagree", "Agree", and "Strongly Agree". Since these statements just discussed highlight the significance of the study, all are provided here.

- "I feel like I am now more open-minded towards drug use than I was when I started college."
- "My friends have impacted my opinion on drug use."
- "My friends made me use drugs whenever we were together."
- "I have friends that have used drugs before."
- "I have used drugs since becoming friends with my current friends."
- "I have used drugs because my friends initially introduced me to drugs."
- "I have experienced influences from my friends to use drugs."
- "My friends have directly influenced my use of drugs."
- "My friends and I have used the same drugs."

DATA ANALYSIS

Factor analysis was used to identify underlying variables that explain the patterns of drug use among college students. The technique allowed the total number of indicators to be grouped into common factors comprised of multiple indicators that are of similar design. Factor analysis was used to create scales for involvement, attachment, commitment, and belief. It was used to determine the likelihood of a student ever using drugs.

Factor Analysis

The attrition-assimilation integration model's concepts (campus involvement, intimate involvement, attachment, commitment, beliefs, and drug beliefs) were factor analyzed using maximum likelihood extraction, varimax rotation, and Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity (KMO and Bartlett's Test). Reliability scores, provided via Cronbach's alpha, were determined for all factors as well.

Involvement

Two separate involvement scales were created: (1) campus involvement and (2) intimate involvement. Campus involvement was organized into two factors after eliminating indicators that reported communalities less than .300 or did not load on any factors in the rotated factor matrix. The first factor group included sporting events and campus recreation (see table below for examples). Factor two included academic and departmental extracurricular involvement (see table below for examples). The Cronbach's alpha was .737 for campus involvement. The KMO value was .759 for the campus involvement scale. Table 3.2 below shows the maximum likelihood rotated factor matrix.

Table 3.2--Campus Involvement Rotated Factor Matrix[a]

	Factor	
	1	2
Attend during any given week at ATU: An ATU sporting event (e.g. football game)	.658	
Attend during any given week at ATU: An intramural game (watch or play)	.581	
Attend during any given week at ATU: An Outdoor Campus Recreation event (e.g. rafting)	.498	
Attend during any given week at ATU: A Student Activities Board event (e.g. Summer Send-Off; movie on the lawn)	.481	
Attend during any given week at ATU: A Resident's Life event (e.g. a luau)	.446	
Attend during any given week at ATU: A drug awareness campaign/event (e.g. Alcohol Awareness Simulator with golf cart)	.432	
Attend during any given week at ATU: A departmental club or organizational event (e.g. Behavioral Sciences Club)		.592
Attend during any given week at ATU: A Student Government Association event		.513
Attend during any given week at ATU: A research lecture/symposium (e.g. departmental colloquium)		.503

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Table 3.2 above represents the two factors of campus involvement, which were created using maximum likelihood, varimax rotation, and KMO tests. The table shows specific campus involvement indicators included within each factor. The indicators represent items within the survey that students were asked to respond to using a scale ranging from “never” to “almost always”. The coefficients within each factor represent the linearity of variables included in that particular factor. The higher the coefficient is, the greater the correlation is between the specific indicator and the overall factor.

Intimate involvement was constructed into four factors. The first factor group labeled “roommates” referred to an individual’s involvement with their roommates through leisure activities. The Cronbach’s alpha was .740 for factor one. Factor two was

labeled “drinking”. The Cronbach’s alpha was .696 for factor two. Factor three was named “shopping”. The Cronbach’s alpha was .753 for factor three. The fourth factor group was labeled “hangout”. The Cronbach’s alpha was .645 for factor four. The KMO value was .804 for the intimate involvement scale. Table 3.3 below provides the maximum likelihood rotated factor matrix for intimate involvement. Specific indicators included in each of the four intimate involvement factors may be found in the table.

Involvement in both scales was recoded to represent: 0=Never; 1=Sometimes; 2=Frequently; 3=Almost Always; and 9=Missing Response.

Table 3.3--Intimate Involvement Rotated Factor Matrix[a]

	Factor			
	1	2	3	4
Do during any given week at ATU with friends, roommates, or neighbors: Eat a meal together	.747			
Do during any given week at ATU with friends, roommates, or neighbors: Watch TV together	.702			
Do during any given week at ATU with friends, roommates, or neighbors: Work on homework together	.517			
Do during any given week at ATU with friends, roommates, or neighbors: Play cards, board games, or video games together	.510			
Do during any given week at ATU with friends, roommates, or neighbors: Have drinks together at a residence		.888		
Do during any given week at ATU with friends, roommates, or neighbors: Go to a party together		.571		
Do during any given week at ATU with friends, roommates, or neighbors: Have drinks together at a bar/tavern		.529		
Do during any given week at ATU with friends, roommates, or neighbors: Get manicures, pedicures, facials, etc. together			.869	
Do during any given week at ATU with friends, roommates, or neighbors: Go shopping together			.576	
Do during any given week at ATU with friends, roommates, or neighbors: Go bowling together				.667
Do during any given week at ATU with friends, roommates, or neighbors: Go to a movie together				.587

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

Table 3.3 above represents the four factors of intimate involvement, which were created using maximum likelihood, varimax rotation, and KMO tests. The table shows specific intimate involvement indicators included within each factor, which represent items within the survey that students were asked to respond to using a scale ranging from "never" to "almost always". The coefficients within each factor represent the linearity of

variables included in that particular factor. The higher the coefficient is, the greater the correlation is between the specific indicator and the overall factor.

Attachment

Attachment measured the extent to which a respondent reported having emotional or physical connectedness with their peers by asking them how strongly they agree or disagree with attachment indicators. Only one factor ended up being extracted, which prevented the solution from being rotated. The Cronbach's alpha was .868 for the attachment measure. The KMO value was .881 for the attachment scale. The new variable based on this attachment scale was named "AttachFriends". Table 3.4 below shows the maximum likelihood rotated factor matrix.

Table 3.4--Attachment Factor Matrix[a]

	Factor 1
How you feel about your friends: It is easy for me to reach out to my friends.	.792
How you feel about your friends: I feel very close to all of my friends.	.762
How you feel about your friends: I know that I can count on my friends to keep my secrets when I ask them to do so.	.736
How you feel about your friends: I know that I can rely on my friends to help me out of any situation at any time.	.723
How you feel about your friends: I feel happiest when I am surrounded by my friends.	.652
How you feel about your friends: I share personal thoughts and feelings with my friends.	.652
How you feel about your friends: I spend as much free time with my friends as possible.	.632
How you feel about your friends: Members of my peer group rarely miss the opportunity to come together for an event.	.455

Extraction Method: Maximum Likelihood.
a. 1 factors extracted. 4 iterations required.

Table 3.4 above represents the single factor for attachment, which was created using maximum likelihood, varimax rotation, and KMO tests. The table shows specific attachment indicators included within the factor. The indicators represent items within the survey that students were asked to respond to using a scale ranging from "strongly disagree" to "strongly agree". The coefficients in the table represent the linearity of variables included in the factor. The higher the coefficient is, the greater the correlation is between the specific indicator and the overall factor. Notice, all attachment indicators loaded onto a single factor.

Commitment

The commitment variable measured the extent to which a respondent would go to remain associated with their peers by asking them to indicate their level of agree or disagreement with commitment indicators. Two factor groups were produced on the rotated factor matrix: 1) supportive commitment and 2) sacrificial commitment.

Supportive commitment included emotional commitment to one's peers (see table below for specific indicators). The Cronbach's alpha was .741 for supportive commitment. The variable created based on this scale was named "CommitSupportive". Sacrificial commitment included the physical measures taken by individual to remain committed to their peers (refer to table below for specific indicators). The Cronbach's alpha was .756 for sacrificial commitment. The variable created based on this scale was named "CommitSacrifices". The KMO value was .826 for the commitment scale. Table 3.5 below shows the maximum likelihood rotated factor matrix.

Table 3.5--Commitment Rotated Factor Matrix[a]

	Factor	
	1	2
How you feel about your friends: I often cancel my own plans in order to spend time with my friends.	.634	
How you feel about your friends: I find myself making subtle attempts to evaluate my position in my peer group.	.587	
How you feel about your friends: I devote much of my energy to keeping the relationships I have with my friends.	.553	
How you feel about your friends: I allow my friends to talk me into doing things I normally would not do on my own.	.546	
How you feel about your friends: I participate in events because my friends want to participate, even though I do not personally want to.	.542	
How you feel about your friends: I allow my friends to pick times to hang out, even when the time may not be the best for me.	.542	
How you feel about your friends: It is easy for me to remain understanding of my friends' situations.		.786
How you feel about your friends: I do not cast judgment on my friends for their imperfections.		.683
How you feel about your friends: I do not mind frequently hosting friendly gatherings or letting friends carpool with me.		.599
How you feel about your friends: I support the actions of my friends regardless of what the actions are.		.475

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Table 3.5 above represents the two factors that measure commitment, which were created using maximum likelihood, varimax rotation, and KMO tests. The table shows specific commitment indicators included within each factor. The indicators represent items within the survey that students were asked to respond to using a scale ranging from "strongly disagree" to "strongly agree". The coefficients within each factor represent the

linearity of variables included in that particular factor. The higher the coefficient is, the greater the correlation is between the specific indicator and the overall factor.

Beliefs

Sixteen total beliefs indicators were factored into one of four factor groups. The four factor groups were labeled “AntiDrugUseBeliefs”, “UnderstandOfDrugUseBeliefs”, “DrugsAtATUBeliefs”, and “CommunityOutreachBeliefs”. Specific beliefs indicators of each factor may be found in the rotated factor matrix below, represented in Table 3.6. The Cronbach’s alpha for each of the four factors was as follows: .816 for factor one, .785 for factor two, .795 for factor three, and .709 for factor four. The KMO value was .808 for the beliefs scale.

Table 3.6--Beliefs Rotated Factor Matrix[a]

	Factor			
	1	2	3	4
I believe the laws should be stricter on people that get caught using drugs.	.749			
Those that have used one drug are more likely to use other drugs.	.676			
Individuals that have used drugs are more likely to commit other criminal acts.	.621			
Individuals that have used drugs have a personal flaw.	.619			
Only drug users can relate to fellow drug users and know what it is that they desire most.	.574			
There is no excuse to ever use drugs.	.565			
College students should know better than to use drugs.	.535			
I can relate to college students that get introduced to drug use.		.704		
If I were to take drugs nothing bad would happen to me.		.670		
Legal penalties are often too strict for drug use charges.		.620		
Certain drugs should become legalized.		.615		
College students should be granted more leniencies when they are caught using drugs.		.605		
Drug use is a problem among college students at ATU.			.939	
Drugs are easy for students at ATU to purchase.			.647	
The community should do more to assist individuals that have struggled with drug use.				.741
The community should do more to understand the unique situations of individuals who have used drugs.				.599

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Table 3.6 above represents the four factors that measure various beliefs relating to drugs, which were created using maximum likelihood, varimax rotation, and KMO tests. The factors were extracted using orthogonal rotation. The table shows specific indicators of beliefs included within each factor, which represent items in the survey students were asked to respond to using a scale ranging from “strongly disagree” to “strongly agree”. The higher the coefficient is, the greater the correlation is between the specific indicator and the overall factor.

CHAPTER 4
RESULTS

LOGISTIC REGRESSION

This chapter includes the analytical models used to produce the study, as well as the results. Binary logistic regression was used to measure the relationship between dichotomous dependent variables and the independent variables. Dependent variables included whether or not students had ever used drugs in general and whether or not students had ever used specific drugs. The independent variables included the factors created using factor analysis, as well as reported demographics. Logistic regression made it possible to determine the likelihood of college students using drugs based on the scores of each predictor.

Regression models were created in three stages to identify relationships. The first logistic regression stage focused on the production of models that represented the relationship between the factors for involvement, attachment, commitment, and beliefs and drug use. The second logistic regression stage focused on the inclusion of demographic characteristics in the models to determine whether any of them were significant predictors of drug use. The third logistic regression stage focused on the inclusion of specific indicators from throughout the survey that could possibly help predict the likelihood of a student using drugs. These items were intended to test whether higher levels of involvement with, attachment to, commitment to, and belief in drug-using peers ultimately led to the susceptibility of drug use among college students.

Stage One: Created Factors and Drug Use Regression Models

Table 4.1a—Factors and "I Have Used Drugs before" Variables in the Equation

	B	Wald	Sig.	Exp(B)
CampusInvolvementIndex	-.027	1.433	.231	.974
IntimateInvolvement_SpendingTimeWithRoommatesOrFriends	.102	.528	.467	1.107
IntimateInvolvement_DrinkingWithFriends	.762	22.071	.000	2.142
IntimateInvolvement_ShoppingOrSpaDayWithFriends	.207	2.473	.116	1.230
IntimateInvolvement_BowlingOrMovieWithFriends	.031	.041	.839	1.032
Attachment_ToFriends	-.061	.186	.667	.941
Commitment_Supportive	.095	.412	.521	1.099
Commitment_Sacrifices	-.244	3.524	.060	.784
Beliefs_AntiDrugUse	-1.069	47.883	.000	.343
Beliefs_UnderstandingOfDrugUse	.614	15.679	.000	1.848
Beliefs_DrugsAtATU	.172	2.302	.129	1.187
Beliefs_CommunityOutreach	.036	.059	.808	1.036
Constant	1.408	45.734	.000	4.087

Table 4.1a shows the logistic regression coefficients, Wald test values, p-value, and odds ratio. Using a .05 criterion of statistical significance, the factors of IntimateInvolvement_DrinkingWithFriends, Beliefs_AntiDrugUse, and Beliefs_UnderstandingOfDrugUse had significant effects on the dependent variable, drug use. The more an individual reported drinking with friends or reported being understanding of drug use the more likely they were to have ever used drugs in general. The more an individual reported disapproval of drug use the less likely they were to have ever used drugs.

The odds ratios indicated the following: An individual who reported drinking with friends was 2.142 times more likely to have ever used drugs than those who did not

report drinking with friends. An individual who reported understanding drug use was 1.848 times more likely to have ever used drugs than an individual who did not report drinking with friends. An individual who reported being opposed to drug use was .657 times less likely to have ever used drugs than an individual who did not report being opposed to drug use.

Table 4.1b—Factors and "I Have Used Drugs before" Model Summary

Cox & Snell R Square	Nagelkerke R Square
.254	.360

Table 4.1b shows the Cox and Snell R Square and the Nagelkerke R Square values. The Cox and Snell R Square value indicates that 25.4% of the variance in the dependent variable, whether or not an individual has ever used drugs in general, is explained by the logistic model in Table 4.1a. The Nagelkerke R Square value indicates that 36.0% of the variance between the predictors and the prediction is explained by the model. It tends to be more reliable and reported more often because of its ability to range from 0 to 1; whereas, the Cox and Snell value does not usually range all the way to 1 making it more difficult to interpret.

Created Factors and Specific Drug Use

Table 4.2a—Factors and SpecificDrugUse_Ever1 (Marijuana) Variables in the Equation

	B	Wald	Sig.	Exp(B)
CampusInvolvementIndex	-.055	6.481	.011	.947
IntimateInvolvement_SpendingTimeWithRoommatesOrFriends	.238	2.884	.089	1.269
IntimateInvolvement_DrinkingWithFriends	.582	18.076	.000	1.790
IntimateInvolvement_ShoppingOrSpaDayWithFriends	.184	2.330	.127	1.202
IntimateInvolvement_BowlingOrMovieWithFriends	-.073	.240	.624	.929
Attachment_ToFriends	-.118	.711	.399	.889
Commitment_Supportive	-.006	.002	.968	.994
Commitment_Sacrifices	-.393	7.540	.006	.675
Beliefs_AntiDrugUse	-1.182	54.010	.000	.307
Beliefs_UnderstandingOfDrugUse	.925	31.553	.000	2.522
Beliefs_DrugsAtATU	.068	.365	.546	1.070
Beliefs_CommunityOutreach	-.083	.361	.548	.920
Constant	.618	10.575	.001	1.855

Table 4.1a shows the logistic regression coefficients, Wald test values, p-value, and odds ratio. Using a .05 criterion of statistical significance, the factors of CampusInvolvementIndex, IntimateInvolvement_DrinkingWithFriends, Commitment_Sacrifices, Beliefs_AntiDrugUse, and Beliefs_UnderstandingOfDrugUse had significant effects on the dependent variable, marijuana use. The more an individual reported drinking with friends or reported being understanding of drug use the more likely they were to have ever used marijuana. The more an individual reported disapproval of drug use the less likely they were to have ever used marijuana. The more involved in campus events an individual was, and the more committed to their peers they were, the less likely they were to have ever used marijuana.

The odds ratios indicated the following: An individual who reported drinking with friends was 1.269 times more likely to have ever used marijuana than an individual who had not reported drinking with friends. An individual who reported being understanding of marijuana use was 2.522 times more likely to have used marijuana than an individual who did not report being understanding of drug use. An individual who reported being involved in campus events was .053 times less likely to report that they had used marijuana than an individual who did report being involved in campus events. An individual who reported making sacrifices to remain committed to their friends was .325 times less likely to have used marijuana than an individual who did not report making sacrifices for their friends. An individual who reported being opposed to drug use was .693 times less likely to have used marijuana than an individual who did not report being opposed to drug use.

Table 4.2b—Factors and SpecificDrugUse_Ever1 (Marijuana) Model Summary

Cox & Snell R Square	Nagelkerke R Square
.320	.428

Table 4.2b shows the Cox and Snell R Square and the Nagelkerke R Square values. The Cox and Snell R Square value indicates that 32.0% of the variance in the dependent variable, whether or not an individual has ever used marijuana, is explained by the logistic model in Table 4.2a. The Nagelkerke R Square value indicates that 42.8% of the variance between the predictors and the prediction is explained by the model.

Table 4.3a—Factors and SpecificDrugUse_Ever2 (Crack or Powder Cocaine) Variables in the Equation

	B	Wald	Sig.	Exp(B)
CampusInvolvementIndex	-.018	.320	.571	.982
IntimateInvolvement_SpendingTimeWithRoommatesOrFriends	-.079	.158	.691	.924
IntimateInvolvement_DrinkingWithFriends	.357	3.921	.048	1.429
IntimateInvolvement_ShoppingOrSpaDayWithFriends	.183	.913	.339	1.201
IntimateInvolvement_BowlingOrMovieWithFriends	-.181	.471	.493	.835
Attachment_ToFriends	-.668	12.683	.000	.513
Commitment_Supportive	.014	.004	.949	1.014
Commitment_Sacrifices	-.327	2.654	.103	.721
Beliefs_AntiDrugUse	-.760	12.771	.000	.467
Beliefs_UnderstandingOfDrugUse	.770	13.599	.000	2.159
Beliefs_DrugsAtATU	.021	.018	.893	1.021
Beliefs_CommunityOutreach	.053	.090	.764	1.054
Constant	-2.716	77.548	.000	.066

Table 4.3a shows the logistic regression coefficients, Wald test values, p-value, and odds ratio. Using a .05 criterion of statistical significance, the factors of IntimateInvolvement_DrinkingWithFriends, Attachment_ToFriends, Beliefs_AntiDrugUse, and Beliefs_UnderstandingOfDrugUse had significant effects on the dependent variable, use of rack or powder cocaine. The more an individual reported drinking with friends or reported being understanding of drug use the more likely they were to have ever used crack or powder cocaine. The more an individual reported being attachment to their friends or reported disapproval of drug use the less likely they were to have ever used crack or powder cocaine.

The odds ratios indicated the following: An individual who reported drinking with friends was 1.429 times more likely to have ever used crack or powder cocaine than those who did not report drinking with friends. An individual who reported being understanding of drug use was 2.159 times more likely to have ever used crack or powder cocaine than an individual who did not report drinking with friends. An individual who reported being attached to their friends was .487 times less likely to have used crack or powder cocaine than an individual who did not report being strongly attached to their friends. An individual who reported being opposed to drug use was .533 times less likely to have ever used crack or powder cocaine than an individual who did not report being opposed to drug use.

Table 4.3b—Factors and SpecificDrugUse_Ever2 (Crack or Powder Cocaine) Model Summary

Cox & Snell R Square	Nagelkerke R Square
.108	.228

Table 4.3b shows the Cox and Snell R Square and the Nagelkerke R Square values. The Cox and Snell R Square value indicates that 10.8% of the variance in the dependent variable, whether or not an individual has ever used crack or powder cocaine, is explained by the logistic model in Table 4.3a. The Nagelkerke R Square value indicates that 22.8% of the variance between the predictors and the prediction is explained by the model.

Table 4.4a—Factors and SpecificDrugUse_Ever3 (Amphetamines or Methamphetamines) Variables in the Equation

	B	Wald	Sig.	Exp(B)
CampusInvolvementIndex	-.044	1.211	.271	.957
IntimateInvolvement_SpendingTimeWithRoommatesOrFriends	.160	.485	.486	1.174
IntimateInvolvement_DrinkingWithFriends	.213	.928	.336	1.238
IntimateInvolvement_ShoppingOrSpaDayWithFriends	-.035	.019	.892	.966
IntimateInvolvement_BowlingOrMovieWithFriends	-.179	.320	.571	.836
Attachment_ToFriends	-.452	3.940	.047	.636
Commitment_Supportive	.047	.032	.859	1.048
Commitment_Sacrifices	-.710	8.213	.004	.491
Beliefs_AntiDrugUse	-.349	2.626	.105	.705
Beliefs_UnderstandingOfDrugUse	.554	6.424	.011	1.741
Beliefs_DrugsAtATU	.048	.072	.789	1.049
Beliefs_CommunityOutreach	.079	.145	.703	1.082
Constant	-2.863	66.288	.000	.057

Table 4.4a shows the logistic regression coefficients, Wald test values, p-value, and odds ratio. Using a .05 criterion of statistical significance, the factors of Attachment_ToFriends, Commitment_Sacrfices, and Beliefs_UnderstandingOfDrugUse had significant effects on the dependent variable, use of amphetamines or methamphetamines. The more an individual reported being understanding of drug use the more likely they were to have ever used amphetamines or methamphetamines. The more attachment to one's friends an individual reported or the more sacrifices one reported they had made to their friends the less likely they were to have ever used amphetamines or methamphetamines.

The odds ratios indicated the following: An individual who reported understanding drug use was 1.741 times more likely to have ever used amphetamines or methamphetamines than an individual who did not report drinking with friends. An individual who reported being attached to one's friends was .364 times less likely to have ever used amphetamines or methamphetamines than an individual who did not report being attached to one's friends. Individuals who made more sacrifices for their friends were .509 times less likely to have ever used amphetamines or methamphetamines than an individual who did not report making sacrifices for one's friends.

Table 4.4b—Factors and SpecificDrugUse_Ever3 (Amphetamines or Methamphetamines) Model Summary

Cox & Snell R Square	Nagelkerke R Square
.051	.139

Table 4.4b shows the Cox and Snell R Square and the Nagelkerke R Square values. The Cox and Snell R Square value indicates that 5.1% of the variance in the dependent variable, whether or not an individual has ever used amphetamines or methamphetamines, is explained by the logistic model in Table 4.4a. The Nagelkerke R Square value indicates that 13.9% of the variance between the predictors and the prediction is explained by the model.

Table 4.5a—Factors and SpecificDrugUse_Ever4 (Valium without a Prescription) Variables in the Equation

	B	Wald	Sig.	Exp(B)
CampusInvolvementIndex	-.089	5.468	.019	.915
IntimateInvolvement_SpendingTimeWithRoommatesOrFriends	.198	.985	.321	1.219
IntimateInvolvement_DrinkingWithFriends	-.004	.000	.984	.996
IntimateInvolvement_ShoppingOrSpaDayWithFriends	.222	1.176	.278	1.249
IntimateInvolvement_BowlingOrMovieWithFriends	-.443	2.081	.149	.642
Attachment_ToFriends	-.432	4.797	.029	.649
Commitment_Supportive	.042	.035	.852	1.043
Commitment_Sacrifices	-.461	4.643	.031	.631
Beliefs_AntiDrugUse	-.525	6.518	.011	.591
Beliefs_UnderstandingOfDrugUse	.639	9.495	.002	1.895
Beliefs_DrugsAtATU	.148	1.026	.311	1.160
Beliefs_CommunityOutreach	-.145	.570	.450	.865
Constant	-2.210	55.710	.000	.110

Table 4.5a shows the logistic regression coefficients, Wald test values, p-value, and odds ratio. Using a .05 criterion of statistical significance, the factors of CampusInvolvementIndex, Attachment_ToFriends, Commitment_Sacrfices, Beliefs_AntiDrugUse, and Beliefs_UnderstandingOfDrugUse had significant effects on the dependent variable, use of Valium without a prescription. The more understanding of drug use an individual reported being the more likely they were to have ever used Valium without a prescription. The more involvement in campus events an individual reported, the more attachment to one's friends an individual reported, the more an individual sacrificed to remain committed to one's friends, and the more opposed to drug use an individual was the more likely they were to have never used Valium without a prescription.

The odds ratios indicated the following: An individual understanding of drug use was 1.895 times more likely to have ever used Valium without a prescription than an individual who was not understanding of drug use. An individual who reported being involved in campus events was .085 times less likely to have ever used Valium without a prescription than an individual who did not report being involved in campus events. An individual who reported being attached to his or her friends was .351 times less likely to have ever used Valium without a prescription than an individual who did not report being attached to his or her friends. An individual who reported being opposed to drug use was .409 times less likely to have ever used Valium without a prescription than an individual who did not report being opposed to drug use. Individuals who made more sacrifices for their friends were .369 times less likely to have ever used Valium without a prescription than an individual who did not report making sacrifices for one's friends.

Table 4.5b—Factors and SpecificDrugUse_Ever4 (Valium without a Prescription) Model Summary

Cox & Snell R Square	Nagelkerke R Square
.070	.161

Table 4.5b shows the Cox and Snell R Square and the Nagelkerke R Square values. The Cox and Snell R Square value indicates that 7.0% of the variance in the dependent variable, whether or not an individual has ever used Valium without a prescription, is explained by the logistic model in Table 4.5a. The Nagelkerke R Square value indicates that 16.1% of the variance between the predictors and the prediction is explained by the model.

Table 4.6a—Factors and SpecificDrugUse_Ever5 (Heroin) Variables in the Equation

	B	Wald	Sig.	Exp(B)
CampusInvolvementIndex	.030	.354	.552	1.031
IntimateInvolvement_SpendingTimeWithRoommatesOrFriends	.009	.001	.978	1.009
IntimateInvolvement_DrinkingWithFriends	.330	1.285	.257	1.390
IntimateInvolvement_ShoppingOrSpaDayWithFriends	-.009	.001	.979	.991
IntimateInvolvement_BowlingOrMovieWithFriends	-.299	.413	.521	.741
Attachment_ToFriends	-.492	2.548	.110	.611
Commitment_Supportive	.071	.037	.848	1.074
Commitment_Sacrifices	-.761	5.252	.022	.467
Beliefs_AntiDrugUse	-.150	.218	.641	.860
Beliefs_UnderstandingOfDrugUse	.154	.210	.646	1.166
Beliefs_DrugsAtATU	.302	2.824	.093	1.353
Beliefs_CommunityOutreach	.211	.604	.437	1.235
Constant	-4.183	60.081	.000	.015

Table 4.6a shows the logistic regression coefficients, Wald test values, p-value, and odds ratio. Using a .05 criterion of statistical significance, the factor of Commitment_Sacrfices had significant effects on the dependent variable, use of heroin. The more committed to one's friends an individual reported to be the less likely they were to have ever used heroin. The odds ratios indicated that an individual who reported being committed and making sacrifices for one's friends was .533 times less likely to have ever used heroin than an individual who did not report making sacrifices to remain committed to his or her friends.

Table 4.6b—Factors and SpecificDrugUse_Ever5 (Heroin) Model Summary

Cox & Snell R Square	Nagelkerke R Square
.028	.121

Table 4.6b shows the Cox and Snell R Square and the Nagelkerke R Square values. The Cox and Snell R Square value indicates that 2.8% of the variance in the dependent variable, whether or not an individual has ever used Heroin, is explained by the logistic model in Table 4.6a. The Nagelkerke R Square value indicates that 12.1% of the variance between the predictors and the prediction is explained by the model.

Table 4.7a—Factors and SpecificDrugUse_Ever6 (Hydrocodone without a Prescription) Variables in the Equation

	B	Wald	Sig.	Exp(B)
CampusInvolvementIndex	-.027	1.285	.257	.974
IntimateInvolvement_SpendingTimeWithRoommatesOrFriends	-.168	1.259	.262	.845
IntimateInvolvement_DrinkingWithFriends	.471	11.584	.001	1.601
IntimateInvolvement_ShoppingOrSpaDayWithFriends	.053	.161	.688	1.055
IntimateInvolvement_BowlingOrMovieWithFriends	-.517	7.334	.007	.596
Attachment_ToFriends	.097	.425	.515	1.102
Commitment_Supportive	.050	.109	.741	1.051
Commitment_Sacrifices	-.551	12.820	.000	.576
Beliefs_AntiDrugUse	-.377	8.408	.004	.686
Beliefs_UnderstandingOfDrugUse	.650	20.404	.000	1.915
Beliefs_DrugsAtATU	-.089	.468	.494	.915
Beliefs_CommunityOutreach	-.012	.007	.934	.988
Constant	-1.420	46.525	.000	.242

Table 4.7a shows the logistic regression coefficients, Wald test values, p-value, and odds ratio. Using a .05 criterion of statistical significance, the factors of IntimateInvolvement_DrinkingWithFriends, IntimateInvolvement_BowlingOrMovieWithFriends, Commitment_Sacrfices, Beliefs_AntiDrugUse, and Beliefs_UnderstandingOfDrugUse had significant effects on the dependent variable, use of hydrocodone without a prescription. The more an

individual reported drinking with friends or reported being understanding of drug use the more likely they were to have ever used hydrocodone without a prescription. Individuals who reported going bowling or to the movies with friends were less likely to report they had ever used hydrocodone without a prescription. Also, the more committed an individual was to friends and showed it through making personal sacrifices and the more they disapproved of the use of drugs the less likely they were to have ever used hydrocodone without a prescription.

The odds ratios indicated the following: An individual who reported drinking with friends was 1.601 times more likely to report the use of hydrocodone without a prescription than an individual who did not report drinking with friends. An individual who reported being understanding of drug use was 1.915 times more likely to have ever used hydrocodone without a prescription than an individual who did not report being understanding of drug use. An individual who went bowling or to the movies with friends was .404 times less likely to report they had ever used hydrocodone without a prescription than an individual who did not report frequently going bowling or to the movies with friends. An individual who reported making sacrifices for one's friends was .424 times less likely to report they had ever used hydrocodone without a prescription than an individual who was not strongly committed to friends. An individual who reported being opposed to drug use was .314 times less likely to report they had ever used hydrocodone without a prescription than an individual who did not report being strongly opposed to drug use.

Table 4.7b—Factors and SpecificDrugUse_Ever6 (Hydrocodone without a Prescription) Model Summary

Cox & Snell R Square	Nagelkerke R Square
.143	.222

Table 4.7b shows the Cox and Snell R Square and the Nagelkerke R Square values. The Cox and Snell R Square value indicates that 14.3% of the variance in the dependent variable, whether or not an individual has ever used hydrocodone without a prescription, is explained by the logistic model in Table 4.7a. The Nagelkerke R Square value indicates that 22.2% of the variance between the predictors and the prediction is explained by the model.

Table 4.8a—Factors and SpecificDrugUse_Ever7 (Oxycontin or Oxycodone without a Prescription) Variables in the Equation

	B	Wald	Sig.	Exp(B)
CampusInvolvementIndex	-.004	.027	.870	.996
IntimateInvolvement_SpendingTimeWithRoommatesOrFriends	-.243	2.168	.141	.784
IntimateInvolvement_DrinkingWithFriends	.378	6.210	.013	1.460
IntimateInvolvement_ShoppingOrSpaDayWithFriends	-.057	.129	.720	.944
IntimateInvolvement_BowlingOrMovieWithFriends	-.609	6.841	.009	.544
Attachment_ToFriends	-.080	.246	.620	.923
Commitment_Supportive	.089	.312	.577	1.094
Commitment_Sacrifices	-.456	7.521	.006	.634
Beliefs_AntiDrugUse	-.285	3.854	.050	.752
Beliefs_UnderstandingOfDrugUse	.515	10.688	.001	1.674
Beliefs_DrugsAtATU	.010	.005	.942	1.010
Beliefs_CommunityOutreach	-.016	.010	.919	.984
Constant	-2.051	70.446	.000	.129

Table 4.8a shows the logistic regression coefficients, Wald test values, p-value, and odds ratio. Using a .05 criterion of statistical significance, the factors of IntimateInvolvement_DrinkingWithFriends, IntimateInvolvement_BowlingOrMovieWithFriends, Commitment_Sacrfices, Beliefs_AntiDrugUse, and Beliefs_UnderstandingOfDrugUse had significant effects on the dependent variable, use of Oxycontin or oxycodone without a prescription. The more an individual reported drinking with friends or reported being understanding of drug use the more likely they were to have ever used Oxycontin or oxycodone without a prescription. Individuals who reported going bowling or to the movies with friends were less likely to report they had ever used Oxycontin or oxycodone without a prescription. Also, the more committed an individual was to friends and showed it through making personal sacrifices and the more they disapproved of the use of drugs the less likely they were to have ever used Oxycontin or oxycodone without a prescription.

The odds ratios indicated the following: An individual who reported drinking with friends was 1.460 times more likely to report the use of Oxycontin or oxycodone without a prescription than an individual who did not report drinking with friends. An individual who reported being understanding of drug use was 1.674 times more likely to have ever used Oxycontin or oxycodone without a prescription than an individual who did not report being understanding of drug use. An individual who went bowling or to the movies with friends was .456 times less likely to report they had ever used Oxycontin or oxycodone without a prescription than an individual who did not report frequently going bowling or to the movies with friends. An individual who reported making sacrifices for one's friends was .366 times less likely to report they had ever used

Oxycontin or oxycodone without a prescription than an individual who was not committed to friends. An individual who reported being opposed to drug use was .248 times less likely to report they had never used Oxycontin or oxycodone without a prescription than an individual who did not report being opposed to drug use.

Table 4.8b—Factors and SpecificDrugUse_Ever7 (Oxycontin or Oxycodone without a Prescription) Model Summary

Cox & Snell R Square	Nagelkerke R Square
.088	.155

Table 4.8b shows the Cox and Snell R Square and the Nagelkerke R Square values. The Cox and Snell R Square value indicates that 8.8% of the variance in the dependent variable, whether or not an individual has ever used Oxycontin or oxycodone without a prescription, is explained by the logistic model in Table 4.8a. The Nagelkerke R Square value indicates that 15.5% of the variance between the predictors and the prediction is explained by the model.

Table 4.9a—Factors and SpecificDrugUse_Ever8 (Xanax without a Prescription) Variables in the Equation

	B	Wald	Sig.	Exp(B)
CampusInvolvementIndex	-.020	.630	.427	.980
IntimateInvolvement_SpendingTimeWithRoommatesOrFriends	.093	.306	.580	1.097
IntimateInvolvement_DrinkingWithFriends	.556	14.692	.000	1.743
IntimateInvolvement_ShoppingOrSpaDayWithFriends	.292	4.209	.040	1.339
IntimateInvolvement_BowlingOrMovieWithFriends	-.197	1.013	.314	.822
Attachment_ToFriends	-.329	4.353	.037	.719
Commitment_Supportive	-.118	.419	.518	.889
Commitment_Sacrifices	-.608	11.765	.001	.544
Beliefs_AntiDrugUse	-.650	14.655	.000	.522
Beliefs_UnderstandingOfDrugUse	.744	18.335	.000	2.103
Beliefs_DrugsAtATU	.125	.973	.324	1.134
Beliefs_CommunityOutreach	.006	.001	.969	1.006
Constant	-1.880	64.636	.000	.153

Table 4.9a shows the logistic regression coefficients, Wald test values, p-value, and odds ratio. Using a .05 criterion of statistical significance, the factors of IntimateInvolvement_DrinkingWithFriends, IntimateInvolvement_ShoppingOrSpaDayWithFriends, Attachment_ToFriends, Commitment_Sacrfices, Beliefs_AntiDrugUse, and Beliefs_UnderstandingOfDrugUse had significant effects on the dependent variable, use of Xanax without a prescription. The more an individual reported drinking with friends, reported spending a shopping day or spa day with friends, or reported being understanding of drug use the more likely they were to have ever used Xanax without a prescription. Individuals who reported being attached to friends were less likely to report they had ever used Xanax without a prescription. Also, the more committed an individual was to friends and showed it

through making personal sacrifices and the more they disapproved of the use of drugs the less likely they were to have ever used Xanax without a prescription.

The odds ratios indicated the following: An individual who reported drinking with friends was 1.743 times more likely to report the use of Xanax without a prescription than an individual who did not report drinking with friends. An individual who reported spending a shopping day or spa day with friends was 1.339 times more likely to report the use of Xanax without a prescription than an individual who had not spent a shopping day or spa day with friends. An individual who reported being understanding of drug use was 2.103 times more likely to have ever used Xanax without a prescription than an individual who did not report being understanding of drug use. An individual who reported being attached to friends was .218 times less likely to report they had ever used Xanax without a prescription than an individual who did not report frequently going bowling or to the movies with friends. An individual who reported making sacrifices for one's friends was .456 times less likely to report they had ever used Xanax without a prescription than an individual who was not strongly committed to friends. An individual who reported being opposed to drug use was .478 times less likely to report they had ever used Xanax without a prescription than an individual who did not report being strongly opposed to drug use.

Table 4.9b—Factors and SpecificDrugUse_Ever8 (Xanax without a Prescription) Model Summary

Cox & Snell R Square	Nagelkerke R Square
.153	.255

Table 4.9b shows the Cox and Snell R Square and the Nagelkerke R Square values. The Cox and Snell R Square value indicates that 15.3% of the variance in the

dependent variable, whether or not an individual has ever used Xanax without a prescription, is explained by the logistic model in Table 4.9a. The Nagelkerke R Square value indicates that 25.5% of the variance between the predictors and the prediction is explained by the model.

Table 4.10a—Factors and SpecificDrugUse_Ever9 (Adderall without a Prescription) Variables in the Equation

	B	Wald	Sig.	Exp(B)
CampusInvolvementIndex	.000	.000	.991	1.000
IntimateInvolvement_SpendingTimeWithRoommatesOrFriends	.041	.065	.799	1.042
IntimateInvolvement_DrinkingWithFriends	.772	28.365	.000	2.165
IntimateInvolvement_ShoppingOrSpaDayWithFriends	-.021	.025	.874	.979
IntimateInvolvement_BowlingOrMovieWithFriends	-.376	3.881	.049	.687
Attachment_ToFriends	.009	.003	.954	1.009
Commitment_Supportive	-.063	.147	.701	.939
Commitment_Sacrifices	.177	1.396	.237	1.194
Beliefs_AntiDrugUse	-.680	17.255	.000	.506
Beliefs_UnderstandingOfDrugUse	.579	12.014	.001	1.784
Beliefs_DrugsAtATU	.048	.128	.720	1.049
Beliefs_CommunityOutreach	-.111	.551	.458	.895
Constant	-1.634	55.478	.000	.195

Table 4.10a shows the logistic regression coefficients, Wald test values, p-value, and odds ratio. Using a .05 criterion of statistical significance, the factors of IntimateInvolvement_DrinkingWithFriends, IntimateInvolvement_BowlingOrMovieWithFriends, Beliefs_AntiDrugUse, and Beliefs_UnderstandingOfDrugUse had significant effects on the dependent variable, use of Oxycontin or oxycodone without a prescription. The more an individual reported

drinking with friends or reported being understanding of drug use the more likely they were to have ever used Adderall without a prescription. Individuals who reported going bowling or to the movies with friends were less likely to report they had ever used Adderall without a prescription. Also, the more an individual disapproved of the use of drugs the less likely they were to have ever used Adderall without a prescription.

The odds ratios indicated the following: An individual who reported drinking with friends was 2.165 times more likely to report the use of Adderall without a prescription than an individual who did not report drinking with friends. An individual who reported being understanding of drug use was 1.784 times more likely to have ever used Adderall without a prescription than an individual who did not report being understanding of drug use. An individual who went bowling or to the movies with friends was .313 times less likely to report they had ever used Adderall without a prescription than an individual who did not report frequently going bowling or to the movies with friends. An individual who reported being opposed to drug use was .494 times less likely to report they had ever used Adderall without a prescription than an individual who did not report being opposed to drug use.

Table 4.10b—Factors and SpecificDrugUse_Ever9 (Adderall without a Prescription) Model Summary

Cox & Snell R Square	Nagelkerke R Square
.198	.303

Table 4.10b shows the Cox and Snell R Square and the Nagelkerke R Square values. The Cox and Snell R Square value indicates that 19.8% of the variance in the dependent variable, whether or not an individual has ever used Adderall without a prescription, is explained by the logistic model in Table 4.10a. The Nagelkerke R Square

value indicates that 30.3% of the variance between the predictors and the prediction is explained by the model.

Table 4.11a—Factors and SpecificDrugUse_Ever10 (LSD or Other Psychedelics) Variables in the Equation

	B	Wald	Sig.	Exp(B)
CampusInvolvementIndex	-.010	.107	.744	.990
IntimateInvolvement_SpendingTimeWithRoommatesOrFriends	-.161	.746	.388	.851
IntimateInvolvement_DrinkingWithFriends	.293	3.045	.081	1.340
IntimateInvolvement_ShoppingOrSpaDayWithFriends	-.049	.061	.805	.953
IntimateInvolvement_BowlingOrMovieWithFriends	-.776	7.023	.008	.460
Attachment_ToFriends	-.419	5.556	.018	.657
Commitment_Supportive	.027	.021	.885	1.027
Commitment_Sacrifices	-.408	4.482	.034	.665
Beliefs_AntiDrugUse	-.778	17.058	.000	.459
Beliefs_UnderstandingOfDrugUse	.986	24.674	.000	2.681
Beliefs_DrugsAtATU	.062	.192	.662	1.064
Beliefs_CommunityOutreach	-.036	.048	.827	.964
Constant	-2.643	71.906	.000	.071

Table 4.11a shows the logistic regression coefficients, Wald test values, p-value, and odds ratio. Using a .05 criterion of statistical significance, the factors of IntimateInvolvement_BowlingOrMovieWithFriends, Attachment_ToFriends, Commitment_Sacrfices, Beliefs_AntiDrugUse, and Beliefs_UnderstandingOfDrugUse had significant effects on the dependent variable, use of lysergic acid diethylamide (LSD) or other psychedelics. The more an individual reported being understanding of drug use the more likely they were to have ever used LSD or other psychedelics. Individuals who reported going bowling to the movies with friends or reported being attached to friends

were less likely to report they had ever used LSD or other psychedelics. Also, the more committed an individual was to friends and showed it through making personal sacrifices and the more they disapproved of the use of drugs the less likely they were to have ever used LSD or other psychedelics.

The odds ratios indicated the following: An individual who reported drinking with friends was 1.340 times more likely to report the use of LSD or other psychedelics than an individual who did not report drinking with friends. An individual who reported being understanding of drug use was 2.681 times more likely to have ever used LSD or other psychedelics than an individual who did not report being understanding of drug use. An individual who reported spending a shopping day or spa day with friends was .540 times less likely to report they had ever used of LSD or other psychedelics than an individual who did not report frequently going bowling or to the movies with friends. An individual who reported being attached to friends was .343 times less likely to report they had ever used LSD or other psychedelics than an individual who did not report high levels of attachment to friends. An individual who reported making sacrifices for one's friends was .335 times less likely to report they had ever used LSD or other psychedelics than an individual who was not strongly committed to friends. An individual who reported being opposed to drug use was .541 times less likely to report they had ever used LSD or other psychedelics than an individual who did not report being opposed to drug use.

Table 4.11b—Factors and SpecificDrugUse_Ever10 (LSD or Other Psychedelics) Model Summary

Cox & Snell R Square	Nagelkerke R Square
.145	.279

Table 4.11b shows the Cox and Snell R Square and the Nagelkerke R Square values. The Cox and Snell R Square value indicates that 14.5% of the variance in the dependent variable, whether or not an individual has ever used LSD or Other Psychedelics, is explained by the logistic model in Table 4.11a. The Nagelkerke R Square value indicates that 27.9% of the variance between the predictors and the prediction is explained by the model.

Table 4.12a—Factors and SpecificDrugUse_Ever11 (Ecstasy or MDMA) Variables in the Equation

	B	Wald	Sig.	Exp(B)
CampusInvolvementIndex	.003	.006	.936	1.003
IntimateInvolvement_SpendingTimeWithRoommatesOrFriends	-.071	.114	.736	.932
IntimateInvolvement_DrinkingWithFriends	.528	8.554	.003	1.696
IntimateInvolvement_ShoppingOrSpaDayWithFriends	.034	.030	.862	1.035
IntimateInvolvement_BowlingOrMovieWithFriends	-.375	1.763	.184	.687
Attachment_ToFriends	-.435	4.856	.028	.647
Commitment_Supportive	.073	.138	.710	1.076
Commitment_Sacrifices	-.258	1.578	.209	.773
Beliefs_AntiDrugUse	-.570	8.683	.003	.565
Beliefs_UnderstandingOfDrugUse	.814	15.261	.000	2.257
Beliefs_DrugsAtATU	-.081	.213	.644	.922
Beliefs_CommunityOutreach	.098	.287	.592	1.103
Constant	-2.969	79.011	.000	.051

Table 4.12a shows the logistic regression coefficients, Wald test values, p-value, and odds ratio. Using a .05 criterion of statistical significance, the factors of IntimateInvolvement_DrinkingWithFriends, Attachment_ToFriends, Beliefs_AntiDrugUse, and Beliefs_UnderstandingOfDrugUse had significant effects on the dependent variable, use of ecstasy or 3,4-methylenedioxymethamphetamine

(MDMA). The more an individual reported drinking with friends or reported being understanding of drug use the more likely they were to have ever used ecstasy or MDMA. The more attachment to friends an individual reported and the more an individual opposed the use of drugs the less likely they were to have ever used ecstasy or MDMA.

The odds ratios indicated the following: An individual who reported drinking with friends was 1.696 times more likely to report the use of ecstasy or MDMA than an individual who did not report drinking with friends. An individual who reported being understanding of drug use was 2.257 times more likely to have ever used ecstasy or MDMA than an individual who did not report being understanding of drug use. An individual who reported being attached to friends was .353 times less likely to report they had ever used ecstasy or MDMA than an individual who did not report high levels of attachment to friends. An individual who reported being opposed to drug use was .435 times less likely to report they had ever used ecstasy or MDMA than an individual who did not report being opposed to drug use.

Table 4.12b—Factors and SpecificDrugUse_Ever11 (Ecstasy or MDMA) Model Summary

Cox & Snell R Square	Nagelkerke R Square
.094	.212

Table 4.12b shows the Cox and Snell R Square and the Nagelkerke R Square values. The Cox and Snell R Square value indicates that 9.4% of the variance in the dependent variable, whether or not an individual has ever used Ecstasy or MDMA, is explained by the logistic model in Table 4.12a. The Nagelkerke R Square value indicates

that 21.2% of the variance between the predictors and the prediction is explained by the model.

Table 4.13a—Factors and SpecificDrugUse_Ever12 (Alcohol before Turning 21 Years Old) Variables in the Equation

	B	Wald	Sig.	Exp(B)
CampusInvolvementIndex	-.055	5.359	.021	.947
IntimateInvolvement_SpendingTimeWithRoommatesOrFriends	.252	2.986	.084	1.287
IntimateInvolvement_DrinkingWithFriends	1.298	34.032	.000	3.663
IntimateInvolvement_ShoppingOrSpaDayWithFriends	.362	5.232	.022	1.435
IntimateInvolvement_BowlingOrMovieWithFriends	-.444	6.852	.009	.642
Attachment_ToFriends	.121	.714	.398	1.129
Commitment_Supportive	-.023	.025	.875	.977
Commitment_Sacrifices	-.234	3.306	.069	.791
Beliefs_AntiDrugUse	-.463	12.110	.001	.629
Beliefs_UnderstandingOfDrugUse	.458	9.996	.002	1.581
Beliefs_DrugsAtATU	-.056	.282	.596	.946
Beliefs_CommunityOutreach	-.137	.948	.330	.872
Constant	2.214	78.792	.000	9.154

Table 4.13a shows the logistic regression coefficients, Wald test values, p-value, and odds ratio. Using a .05 criterion of statistical significance, the factors of CampusInvolvementIndex, IntimateInvolvement_DrinkingWithFriends, IntimateInvolvement_ShoppingOrSpaDayWithFriends, IntimateInvolvement_BowlingOrMovieWithFriends, Beliefs_AntiDrugUse, and Beliefs_UnderstandingOfDrugUse had significant effects on the dependent variable, use of alcohol before turning 21 years old. The more an individual reported drinking with friends, reported spending a shopping day or spa day with friends, or reported being

understanding of drug use the more likely they were to have ever used alcohol before turning 21 years old. Individuals who reported being in campus events were less likely to report they had ever used alcohol before turning 21 years old. Also, the more an individual was to go bowling or to the movies with friends and the more they disapproved of the use of drugs the less likely they were to have ever used alcohol before turning 21 years old.

The odds ratios indicated the following: An individual who reported drinking with friends was 3.663 times more likely to report the use of alcohol before turning 21 years old than an individual who did not report drinking with friends. An individual who reported spending a shopping day or spa day with friends was 1.435 times more likely to report the use of alcohol before turning 21 years old than an individual who had not spent shopping days or spa days with friends. An individual who reported being understanding of drug use was 1.581 times more likely to have ever used alcohol before turning 21 years old than an individual who did not report being understanding of drug use. An individual who reported being involved in campus events was .053 times less likely to report they had ever used alcohol before turning 21 years old than an individual who did not report being involved in campus events. An individual who reported going bowling or to the movies with friends was .358 times less likely to report they had never used alcohol before turning 21 years old than an individual who did not frequently go bowling or to the movies with friends. An individual who reported being opposed to drug use was .371 times less likely to report they had never used alcohol before turning 21 years old than an individual who did not report being opposed to drug use.

Table 4.13b—Factors and SpecificDrugUse_Ever12 (Alcohol before Turning 21 Years Old) Model Summary

Cox & Snell R Square	Nagelkerke R Square
.204	.313

Table 4.13b shows the Cox and Snell R Square and the Nagelkerke R Square values. The Cox and Snell R Square value indicates that 20.4% of the variance in the dependent variable, whether or not an individual has ever used alcohol before turning 21 years old, is explained by the logistic model in Table 4.13a. The Nagelkerke R Square value indicates that 31.3% of the variance between the predictors and the prediction is explained by the model.

Stage Two: Introducing Demographic Characteristics into the Regression Model

Part A

In order to determine whether any demographics were independently able to predict drug use, logistic regression was carried out between each demographic and each dependent variable. Demographic characteristics for gender, race/ethnicity, religious attendance, and class standing were dummy-coded as follows:

Figure 4.1—Demographics Dummy-Coded Values

Code	Gender	Race/Ethnicity	Religious Attendance	Class Standing
0	Female	Non-White	Attend Religious Services to Some Extent	Lowerclassman
1	Male	White	Do Not Attend Religious Services at All	Upperclassman

Independently, none of the demographics observed had a significant effect on general drug use. A student's race/ethnicity had significant effects on the reported use of Adderall without a prescription, as well as the reported use of alcohol before turning 21 years old. Non-whites were more likely than whites to report the use of both of these drugs. Religious attendance had a significant effect on the use of LSD or other

psychedelics. Individuals who reported attending religious services to some extent were found to be more likely to have ever used LSD or other psychedelics than individuals who reported they do not attend religious services at all. Gender had a significant effect on the reported use of heroin, hydrocodone without a prescription, Oxycontin or oxycodone without a prescription, Adderall without a prescription, and LSD or other Psychedelics. Males were more likely than females to report the use of each of these drugs. Class standing had a significant effect on the reported use of crack or powder cocaine, Valium without a prescription, hydrocodone without a prescription, Xanax without a prescription, LSD or other Psychedelics, and ecstasy or MDMA. Lowerclassmen (freshmen and sophomores) were more likely to report the use of each of these drugs than upperclassmen (juniors, seniors, and super seniors) were to do so. Models for the significant relationships between demographics and specific drug use may be found in Appendix A.

Part B

After running binary logistic regression for all dependent variables (drug use) and independent variables (factors), the significant factors from each relationship were used to create new logistic regression models, which also included demographics. Demographics were significant in eleven of the binary logistic regression models. Note that each model was observed with only one demographic at a time at this point in the study. Gender, race/ethnicity, and class standing were the observed demographics that had significant effects on drug use when included in these regressions. Religious attendance did not have a significant effect on the reported use of drugs when included in models with only significant factors. Gender was significant in four of the eleven

models, race/ethnicity had significant effects in four of the models, and class standing had significant effects on the dependent variables in the remaining three models. Of the eleven models, only one drug was significantly affected by more than one demographic. Race/ethnicity and class standing both had significant effects on the reported use of Xanax without a prescription.

There was a pattern observed within these eleven regression models. The Commitment_Sacrifices factor was in three of the four regression models that also included gender. The factor of CampusInvolvementIndex was included in all three of the regression models that also included class standing. Other recurring independent variables existent within the eleven regression models in which demographics were significant predictors of drug use included IntimateInvolvement_DrinkingWithFriends (nine times); Beliefs_AntiDrugUse (nine times); Beliefs_UnderstandingOfDrugUse (ten times); IntimateInvolvement_ShoppingOrSpaDayWithFriends (five times); and IntimateInvolvement_BowlingOrMovieWithFriends (seven times). Models in which demographics were significant when included in regressions with only significant factors may be found in Appendix B.

Part C

A saturated binary logistic regression model was created for each dependent variable, which incorporated all applicable independent variables into the analysis. All of the factors previously created using factor analysis and the four effects-coded demographic characteristics were included in the regression model for each drug. The method selected was the stepwise Backward: Wald. The results indicated the most adequate predictors for each substance used among college students. Once again, none of

the regression models had more than one demographic that had a significant effect on the use of a particular drug. However, in the saturated models, gender had a significant effect on the reported use of drugs in general, as well as the reported use of heroin, Oxycontin or oxycodone without a prescription, and Adderall without a prescription. The saturated regression models discovered that class standing had a significant effect on the reported use of crack or powder cocaine, Xanax without a prescription, and ecstasy or MDMA. Race/ethnicity was determined to have a significant effect on the reported use of Valium without a prescription.

Saturated logistic regression models with all applicable social control factors and observed demographics were created. Each model included every factor created, as well as a single demographic. The final steps from the stepwise Backward: Wald saturated binary logistic regression models that found demographic characteristics to have significant effects on reported drug use are provided in Appendix C.

Stage Three: Individual Item Indicators Included in the Regression Model

Part A

There were unique item indicators in the survey that were designed to test the effects of peer influence on student drug use. The intention was to determine whether higher levels of involvement with, attachment to, commitment to, and belief in an individual's drug-using peers ultimately had an effect on the likelihood of a student using drugs. The eleven indicators, as addressed in previous chapters (see page 59), consisted of statements that had dichotomous answers and Likert scale responses, both.

The seven indicators with Likert scale response sets were suitable for the binary logistic regression model as they were. The four indicators with dichotomous answer

choices were used to create an index named PeerInfluenceIndex. The index computed the sum of the four dichotomous indicators. The higher a respondent's score was on the PeerInfluenceIndex, the more likely the individual was to (1) have used drugs before and (2) have experienced various forms of peer influence to do so.

Table 4.14--PeerInfluenceIndex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	54	9.4	9.5	9.5
	1	178	30.8	31.3	40.8
	2	157	27.2	27.6	68.5
	3	102	17.7	18.0	86.4
	4	77	13.3	13.6	100.0
	Total	568	98.4	100.0	
Missing	System	9	1.6		
Total		577	100.0		

Table 4.14 above shows the frequency table created as an index for peer influence on student drug use. The table shows how many individuals reported that they experienced/are described by zero, one, two, three, or all four of the following indicators:

- I have friends that have used drugs before.
- I have used drugs *since* becoming friends with my current friends.
- I have used drugs because my friends initially introduced me to drugs.
- I have experienced influences from my friends to use drugs.

Part B

Crosstabulations and risk estimates were determined for the item indicators that make up the PeerInfluenceIndex in order to better explain the significance of their effects on an individual's use of drugs. The risk estimates are particularly interesting, especially for the FriendsHaveUsedDrugs variable and the ExperiencedPeerInfluenceToUseDrugs variable. These risk estimate tables provided odds ratios for these specific independent variables and the effect they had on reported drug use, both in general and specific. The

table below provides the odds ratios for these two indicators and the relationship they share with each of the thirteen dependent variables.

Table 4.15--PeerInfluenceIndex Indicators and Odds Ratio of Personal Drug Use

	FriendsHaveUsedDrugs	ExperiencedPeerInfluenceToUseDrugs
	Value	Value
I have used drugs before	12.317	5.173
Marijuana	19.811	3.870
Crack or Powder Cocaine	6.828	2.390
Amphetamines or Methamphetamines	3.966	1.773
Valium (without a prescription)	5.722	1.703
Heroin	1.799	1.268
Hydrocodone (without a prescription)	18.447	1.576
Oxycontin or Oxycodone (without a prescription)	11.002	1.723
Xanax (without a prescription)	13.781	1.959
Adderall (without a prescription)	9.565	2.607
LSD or other Psychedelics	8.964	2.445
Ecstasy or MDMA	5.989	2.437
Alcohol (before turning 21 years old)	13.782	4.297

Table 4.15 above shows the likelihood of an individual reporting drug use if they reported their peers used drugs, as well as the likelihood of an individual reporting drug use if they reported they had ever experienced peer influences to use drugs. Respondents who reported they had used drugs before were 12.317 times more likely to report their friends had used drugs. Respondents who reported they had used drugs before were 5.173 times more likely to report they had experienced peer influences to use drugs. The remainder of the values in the table may be similarly interpreted.

Part C

Saturated binary logistic regression models were developed using all applicable factors, demographic characteristics, and single item indicators of peer influence with the intent to determine which variables throughout the entire study had significant effects on college student drug use. The method chosen for this analysis was stepwise Backward: Wald. This method was selected because the regression models included multiple explanatory variables. Stepwise Backward: Wald was used to test the significance of eliminating certain variables at each step. This process was used to test the change in likelihood of a student reporting drug use. The Wald test was selected in order to test the significance of each variable's coefficient in the regression model; it showed which explanatory, or independent, variables contributed significantly to the relationship explained by the model. The step number below each of the tables shown below represents the number of elimination stages the regression went through to obtain the final regression model. There were thirteen of these models; one for each dependent variable. The tables below include all final significant predictors of student drug use, general and specific, that were measured using the survey instrument. These saturated models are the final products; they take into account the totality of potential effects of all independent variables on reported drug use. All of the variables considered throughout the study up to this point are applied to the saturated models in order to develop the most appropriate explanation as to which students are the most likely to report experiences with drugs for recreational and/or non-medicinal purposes.

Table 4.16--Saturated Binary Logistic Regression Model for General Drug Use

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_DrinkingWith Friends	.307	2.844	.092	1.359
Commitment_Sacrifices	-.377	3.679	.055	.686
Beliefs_AntiDrugUse	-.760	11.649	.001	.468
Beliefs_UnderstandingOfDrugUse	.350	3.067	.080	1.419
Class_Standing_Recoded(1)	.734	4.001	.045	2.084
MoreOpenMindedTowardsDrugUse	-.450	5.596	.018	.638
FriendsMadeMeUseDrugsWhenWe WereTogether	1.064	5.292	.021	2.897
FriendsAndIHaveUsedSameDrugs	1.072	34.541	.000	2.921
PeerInfluenceIndex	1.676	46.681	.000	5.347
Constant	-4.253	29.364	.000	.014

Step 14[a]

Table 4.16 above shows the final regression model for reported drug use in general. Individuals who reported drinking with friends were 1.359 times more likely to report the use of other drugs. The more committed an individual reported being to their peers, the less likely they were to report drug use. Upperclassmen were 2.084 times more likely to report drug use than lowerclassmen. Item indicators specific to peer influence on student drug use were found to be positively correlated with reported drug use. Individuals who reported the use of drugs were 2.897 times more likely to report their friends had made them use drugs when they were together; were 2.921 times more likely to use the same drugs their friends had used; and 5.347 times more likely to have reported that they had experienced peer influence to use drugs before, in general. Beliefs had positive and negative correlations with reported drug use. The more opposed to drug use an individual reported being, the less likely they were to have ever used drugs; however, the more sympathetic an individual reported being to drug use and drug users, the more likely they were to report the use of drugs.

Table 4.17—Saturated Binary Logistic Regression Model for Marijuana Use

	B	Wald	Sig.	Exp(B)
Commitment_Sacrifices	-.516	8.157	.004	.597
Beliefs_AntiDrugUse	-.957	25.336	.000	.384
Beliefs_UnderstandingOfDrugUse	.575	10.643	.001	1.776
FriendsMadeMeUseDrugsWhenWe WereTogether	.803	6.995	.008	2.232
FriendsAndIHaveUsedSameDrugs	1.020	58.228	.000	2.774
PeerInfluenceIndex	.524	15.269	.000	1.688
Constant	-4.158	66.644	.000	.016

Step 17[a]

Table 4.17 above shows the final regression model for reported marijuana use. Item indicators specific to peer influence on student drug use were found to be positively correlated with reported marijuana use. Individuals who reported the use of marijuana were 2.232 times more likely to report their friends had made them use marijuana when they were together; were 2.774 times more likely to use marijuana if their friends had used it; and were 1.688 times more likely to report they had experienced some form of peer influence in general to use marijuana. Individuals who reported being more committed to their peers were less likely to report marijuana use. Beliefs had positive and negative correlations with reported marijuana use. The more opposed to drug use an individual reported being, the less likely they were to have ever used marijuana; however, the more sympathetic an individual reported being to drug use and drug users, the more likely they were to report the use of marijuana.

Table 4.18—Saturated Binary Logistic Regression Model for Crack or Powder Cocaine Use

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_DrinkingWith Friends	.333	3.333	.068	1.396
Attachment_ToFriends	-.719	17.912	.000	.487
Commitment_Sacrifices	-.412	3.914	.048	.663
Beliefs_AntiDrugUse	-.739	11.163	.001	.478
Beliefs_UnderstandingOfDrugUse	.642	9.368	.002	1.901
FriendsDirectlyInfluencedMyUseOf Drugs	.596	12.502	.000	1.815
Constant	-3.954	83.282	.000	.019

Step 17[a]

Table 4.18 above shows the final regression model for reported crack or powder cocaine use. Individuals who reported the use of drugs were 1.815 times more likely to report their friends had directly influenced their use of crack or powder cocaine and were 1.396 times more likely to report the use of crack or powder cocaine if they reported drinking with friends. The more attached and the more committed an individual reported being to his or her friends, the less likely they were to report use of crack or powder cocaine. An individual who reported being strongly attached to their friends was .513 times less likely to report they had ever used crack or powder cocaine. An individual who reported being strongly committed to their friends was .337 times less likely to report the use of crack or powder cocaine. A student who reported being directly influenced by their peers to use drugs was 1.815 times more likely to report the use of crack or powder cocaine. Beliefs had positive and negative correlations with reported crack or powder cocaine use. The more opposed to drug use an individual reported being, the less likely they were to have ever used crack or powder cocaine; however, the more sympathetic an individual reported being to drug use and drug users, the more likely they were to report the use of crack or powder cocaine.

Table 4.19—Saturated Binary Logistic Regression Model for Amphetamines or Methamphetamines Use

	B	Wald	Sig.	Exp(B)
Attachment_ToFriends	-.390	4.129	.042	.677
Commitment_Sacrifices	-.764	9.322	.002	.466
Beliefs_UnderstandingOfDrugUse	.420	4.802	.028	1.522
Gender_Recoded(1)	.654	2.848	.091	1.922
FriendsDirectlyInfluencedMyUseOf Drugs	.654	12.171	.000	1.923
Constant	-4.566	76.391	.000	.010

Step 18[a]

Table 4.19 above shows the final regression model for reported use of amphetamines or methamphetamines. Males were 1.922 times more likely than females to report the use of these substances. Individuals who reported the use of amphetamines or methamphetamines were 1.522 times more likely to report being lenient towards drug use. Individuals who reported the use of these substances were 1.923 times more likely to report their friends had directly influenced their use. Student who reported the use of these drugs were less likely to report being strongly attached or committed to their peers.

Table 4.20—Saturated Binary Logistic Regression Model for Valium Use without a Prescription

	B	Wald	Sig.	Exp(B)
Attachment_ToFriends	-.484	7.835	.005	.617
Commitment_Sacrifices	-.474	4.408	.036	.622
MoreOpenMindedTowardsDrugUse	-.346	3.371	.066	.708
FriendsImpactedOpinionOnDrugUse	.559	7.558	.006	1.749
FriendsAndIHaveUsedSameDrugs	.772	17.306	.000	2.163
Constant	-5.018	53.440	.000	.007

Step 18[a]

Table 4.20 above shows the final regression model for reported use of Valium without a prescription. Item indicators specific to peer influence on student drug use were found to be positively correlated with reported drug use. Students who reported the use of Valium without a prescription were 1.749 times more likely to report their friends

had impacted their opinion on drug use, and were 2.163 times more likely to report their friends had used valium without a prescription as well. Open-mindedness towards drug use, attachment to friends, and sacrificial commitment to one's peers were all negatively correlated with reported use of Valium without a prescription. Therefore, as each of these indicators increased, the likelihood of reporting the use of Valium without a prescription decreased.

Table 4.21—Saturated Binary Logistic Regression Model for Heroin Use

	B	Wald	Sig.	Exp(B)
Commitment_Sacrifices	-.864	5.969	.015	.421
Beliefs_DrugsAtATU	.536	6.853	.009	1.709
Gender_Recoded(1)	1.402	6.213	.013	4.062
FriendsAndIHaveUsedSameDrugs	.487	3.786	.052	1.628
Constant	-5.775	43.164	.000	.003

Step 19[a]

Table 4.21 above shows the final regression model for reported use of heroin. Individuals who reported heroin use were 1.709 times more likely to report they believed drugs on the ATU campus were popular and easy to purchase. Males were 4.062 times more likely than females to report the use of heroin. Those who reported heroin use were 1.628 times more likely to report their friends had used the same drugs. Higher commitment to friends resulted in a lower likelihood of reporting heroin use.

Table 4.22—Saturated Binary Logistic Regression Model for Hydrocodone Use without a Prescription

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_DrinkingWithFriends	.359	7.374	.007	1.431
IntimateInvolvement_BowlingOrMovieWithFriends	-.452	5.931	.015	.636
Commitment_Sacrifices	-.643	14.310	.000	.526
Beliefs_UnderstandingOfDrugUse	.526	12.973	.000	1.692
FriendsDirectlyInfluencedMyUseOfDrugs	.253	3.467	.063	1.288
FriendsAndIHaveUsedSameDrugs	.575	19.051	.000	1.777
Race_Ethnicity_Recoded_2(1)	-.490	3.026	.082	.613
Constant	-3.349	64.394	.000	.035

Step 16[a]

Table 4.22 above shows the final regression model for reported use of hydrocodone without a prescription. Individuals who reported drinking with friends were 1.431 times more likely to report the use of hydrocodone without a prescription. Item indicators specific to peer influence on student drug use were found to be positively correlated with reported hydrocodone use. Individuals who reported hydrocodone use without a prescription were 1.288 times more likely to report their friends had directly influenced their use of drugs and were 1.777 times more likely to report their friends had used the drugs. Individuals who reported the use of hydrocodone without a prescription were 1.692 times more likely to report being more lenient towards drug use. Individuals who reported use of hydrocodone without a prescription were less likely to report going bowling or to movies with friends and less likely to report being sacrificially commitment to their peer associations. Whites were .387 times less likely than non-whites to report use of hydrocodone without a prescription.

Table 4.23—Saturated Binary Logistic Regression Model for Oxycontin or Oxycodone Use without a Prescription

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_BowlingOrMovieWithFriends	-.575	6.403	.011	.563
Commitment_Sacrifices	-.468	6.167	.013	.626
Beliefs_UnderstandingOfDrugUse	.356	4.174	.041	1.427
Gender_Recoded(1)	.895	10.242	.001	2.446
FriendsDirectlyInfluencedMyUseOfDrugs	.454	7.111	.008	1.575
FriendsAndIHaveUsedSameDrugs	.853	26.964	.000	2.347
PeerInfluenceIndex	-.282	3.302	.069	.755
Constant	-4.868	82.731	.000	.008

Step 16[a]

Table 4.23 above shows the final regression model for reported use of Oxycontin or oxycodone without a prescription. Students who reported the use of Oxycontin or oxycodone without a prescription were 1.427 times more likely to be accepting of individuals who have used drugs. Those who reported the use of these substances were 1.575 times more likely to report their friends directly influenced their use of the drug and were 2.347 times more likely to report their peers had used the same drugs as them. Males were 2.446 times more likely than females to report the use of Oxycontin or oxycodone without a prescription. Students who reported bowling or going to the movies with friends were less likely to report the use of Oxycontin or oxycodone without a prescription. Individuals were less likely to report the use of these drugs if they reported being more committed and devoted to their peers.

Table 4.24—Saturated Binary Logistic Regression Model for Xanax Use without a Prescription

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_DrinkingWithFriends	.490	10.695	.001	1.633
IntimateInvolvement_ShoppingOrSpaDayWithFriends	.289	3.803	.051	1.336
Attachment_ToFriends	-.425	8.373	.004	.653
Commitment_Sacrifices	-.664	12.764	.000	.515
Beliefs_AntiDrugUse	-.481	6.897	.009	.618
Beliefs_UnderstandingOfDrugUse	.593	11.363	.001	1.810
FriendsDirectlyInfluencedMyUseOfDrugs	.413	7.915	.005	1.511
FriendsAndIHaveUsedSameDrugs	.344	5.023	.025	1.411
Race_Ethnicity_Recoded_2(1)	-.600	3.687	.055	.549
Constant	-3.472	52.545	.000	.031

Step 14[a]

Table 4.24 above shows the final regression model for reported Xanax use without a prescription. Students who reported drinking with friends were 1.633 times more likely to report the use of Xanax without a prescription. Those who reported spending shopping days or spa days with friends were 1.336 times more likely to report using Xanax without a prescription. Item indicators specific to peer influence on student drug use were found to be positively correlated with reported use of Xanax without a prescription. Individuals who reported Xanax use without a prescription were 1.511 times more likely to report their friends had directly influenced their use of drugs and were 1.411 times more likely to report their friends had used the same drugs. Individuals who reported the use of Xanax without a prescription were 1.810 times more likely to report being more sympathetic to drug use. Whites were .451 times less likely than non-whites to report Xanax use without a prescription. Higher reported levels of attachment and sacrificial commitment to one's peers were correlated with lower reported rates of

Xanax use without a prescription. Individuals who were opposed to drug use and felt strongly about the dangers were less likely to report the use of Xanax without a prescription.

Table 4.25—Saturated Binary Logistic Regression Model for Adderall Use without a Prescription

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_DrinkingWithFriends	.635	20.690	.000	1.886
IntimateInvolvement_ShoppingOrSpaDayWithFriends	.304	3.247	.072	1.355
Beliefs_AntiDrugUse	-.513	7.503	.006	.599
Beliefs_UnderstandingOfDrugUse	.323	3.105	.078	1.381
Gender_Recoded(1)	1.008	10.374	.001	2.741
FriendsDirectlyInfluencedMyUseOfDrugs	.520	13.231	.000	1.682
FriendsAndIHaveUsedSameDrugs	.412	7.931	.005	1.510
Race_Ethnicity_Recoded_2(1)	-.731	5.711	.017	.481
Constant	-3.816	59.282	.000	.022

Step 15[a]

Table 4.25 above shows the final regression model for reported Adderall use without a prescription. Students were 1.886 times more likely to report the use of Adderall without a prescription if they reported drinking with friends. Those who reported spending shopping days or spa days with friends were 1.355 times more likely to report using Adderall without a prescription. Item indicators specific to peer influence on student drug use were found to be positively correlated with reported Adderall use without a prescription. Individuals who reported Adderall use without a prescription were 1.682 times more likely to report their friends had directly influenced their use of drugs and were 1.510 times more likely to report their friends had also used the drug. Males were 2.741 times more likely than females to report the use of Adderall without a prescription. Individuals opposed to drug use were less likely to report ever using

Adderall without a prescription. Non-whites were more likely than whites to report the use of Adderall without a prescription.

Table 4.26—Saturated Binary Logistic Regression Model for Use of LSD or Other Psychedelics

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_BowlingOrMovieWithFriends	-.654	5.129	.024	.520
Attachment_ToFriends	-.487	8.199	.004	.615
Commitment_Sacrifices	-.598	7.189	.007	.550
Beliefs_AntiDrugUse	-.529	5.623	.018	.589
Beliefs_UnderstandingOfDrugUse	.819	13.210	.000	2.267
Gender_Recoded(1)	.524	2.798	.094	1.688
FriendsImpactedOpinionOnDrugUse	.442	5.003	.025	1.556
FriendsDirectlyInfluencedMyUseOfDrugs	.372	4.440	.035	1.451
FriendsAndIHaveUsedSameDrugs	.578	8.996	.003	1.783
Constant	-6.094	65.344	.000	.002

Step 14[a]

Table 4.26 above shows the final regression model for reported use of LSD or other psychedelics. Item indicators specific to peer influence on student drug use were found to be positively correlated with reported LSD or other psychedelic use. Individuals who reported use of LSD or other psychedelics were 1.556 times more likely to report his or her friends impacted their opinion on drug use, 1.451 times more likely to report their friends had directly influenced their use of drugs, and were 1.783 times more likely to report their friends had used these drugs. Males were 1.688 times more likely than females to report the use LSD or other psychedelics. Higher reported levels of attachment and sacrificial commitment to one's peers were correlated with lower reported rates of use of LSD or other psychedelics. Students who reported they went bowling or to the movies with friends on frequent occasions were less likely to report use of LSD or other psychedelics. Beliefs had positive and negative correlations with reported LSD or

other psychedelic use. The more opposed to drug use an individual reported being, the less likely they were to have ever used LSD or other psychedelics; however, individuals who reported the use of LSD or other psychedelics were more likely to report being sympathetic to drug use and drug users.

Table 4.27—Saturated Binary Logistic Regression Model for Use of Ecstasy or MDMA

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_DrinkingWithFriends	.497	6.940	.008	1.644
Attachment_ToFriends	-.413	4.976	.026	.662
Beliefs_AntiDrugUse	-.568	6.389	.011	.567
Beliefs_UnderstandingOfDrugUse	.808	14.395	.000	2.244
Class_Standing_Recoded(1)	-.893	6.509	.011	.410
MoreOpenMindedTowardsDrugUse	-.341	3.020	.082	.711
FriendsMadeMeUseDrugsWhenWeWereTogether	-.691	3.026	.082	.501
FriendsDirectlyInfluencedMyUseOfDrugs	.771	17.064	.000	2.162
Constant	-2.099	8.772	.003	.123

Step 15[a]

Table 4.27 above shows the final regression model for reported use of ecstasy or MDMA. Students who reported drinking with their friends were 1.644 times more likely to report use of ecstasy or MDMA. Individuals who reported use of ecstasy or MDMA were 2.162 times more likely to report their friends had directly influenced their use of ecstasy or MDMA. Beliefs had positive and negative correlations with reported ecstasy or MDMA use. The more opposed to drug use an individual reported being, the less likely they were to have ever used ecstasy or MDMA; however, individuals who reported the use of ecstasy or MDMA were more likely to report being sympathetic to drug use and drug users. Attachment to friends had a negative correlation with reported ecstasy or MDMA use. Those who reported ecstasy or MDMA use were less likely to have strong

attachment to their peers. Lowerclassmen were also more likely than upperclassmen to report the use of ecstasy or MDMA.

Table 4.28—Saturated Binary Logistic Regression Model for Use of Alcohol before Turning 21 Years Old

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_DrinkingWithFriends	.995	20.195	.000	2.705
IntimateInvolvement_ShoppingOrSpaDayWithFriends	.357	4.877	.027	1.430
IntimateInvolvement_BowlingOrMovieWithFriends	-.441	6.931	.008	.644
FriendsAndIHaveUsedSameDrugs	.664	16.445	.000	1.943
PeerInfluenceIndex	.776	20.692	.000	2.173
Race_Ethnicity_Recoded_2(1)	-.569	3.920	.048	.566
Constant	-.625	3.629	.057	.535

Step 17[a]

Table 4.28 above shows the final regression model for reported use of alcohol before turning 21 years old. Students who reported drinking with friends were 2.705 times more likely to report doing so before the age of 21. Students who reported spending shopping or spa days with friends were 1.430 times more likely to report drinking before turning 21. Individuals who reported drinking alcohol before turning 21 were less likely to go bowling or to the movies with friends. Item indicators specific to peer influence on student drug use were positively correlated with reported use of alcohol before turning 21. Individuals who reported use of alcohol before 21 were 1.943 times more likely to report their friends had used alcohol and were 2.173 times more likely to report they had experienced various forms of peer influence to use alcohol. Non-whites were more likely than whites to report the use of alcohol before the legal age.

Relating the Results back to the Hypotheses

Hypothesis one: involvement, attachment, commitment, and belief factors, and peer influence indicators

The first hypothesis stated that reported drug use among college students is predicted by the associations an individual shares with his or her peers, particularly drug-using peers, and that this relationship can be measured using the social control variables of involvement, attachment, commitment, and belief.

Factors of involvement, commitment, and belief all had significant effects on reported drug use in general. Higher involvement with peers resulted in a higher likelihood of using drugs in general. More commitment resulted in a lower likelihood of using drugs in general. Beliefs worked both ways; some resulted in a higher likelihood of drug use while others resulted in a lower likelihood, as explained in Stage Three: Part c. Overall, indicators of peer influence resulted in a higher likelihood of reporting personal drug use.

Factors of commitment and belief had significant effects on reported use of marijuana, specifically. Higher reports of commitment to one's peers resulted in a lower likelihood of reporting marijuana use. Beliefs worked both ways; some resulted in a higher likelihood of marijuana use while others resulted in a lower likelihood, as explained in Stage Three: Part c. All indicators of peer influence on marijuana use were positively correlated; therefore, an individual who reported experiencing various forms of peer influence was likely to report the use of marijuana.

Factors of involvement, attachment, commitment, and beliefs had significant effects on reported use of crack or powder cocaine. Higher reports of involvement

resulted in a higher likelihood of reporting crack or powder cocaine use. Higher reports of attachment, as well as commitment, to one's peers resulted in a lower likelihood of reporting crack or powder cocaine use. Beliefs worked both ways; some resulted in a higher likelihood of crack or powder cocaine use while others resulted in a lower likelihood, as explained in Stage Three: Part c. All indicators of peer influence in the final model were positively correlated with crack or powder cocaine use; therefore, peer influence had significant effects on reported use of crack or powder cocaine.

Factors of attachment, commitment, and beliefs all had significant effects on reported amphetamine or methamphetamine use. The more attached and the more committed an individual reported being to friends, the less likely they were to report amphetamine or methamphetamine use. Beliefs that had a significant effect on the use of these substances support that individuals who have used them are ultimately more sympathetic to drug use and users. There was one indicator of peer influence in the final model that supported a positive correlation between peer influence and use of amphetamines or methamphetamines; therefore, an individual who reported the use of these substances was likely to have experienced peer influences to do so.

Factors of attachment and commitment had significant effects on reported use of Valium without a prescription. Attachment to those peers and commitment to them both had negative correlations with reported Valium use. Individuals who reported being highly attached to or committed to their peers were less likely to report the use of Valium without a prescription. Indicators of peer influence on Valium use without a prescription and opinions towards use show that students who report use of this drug are more likely to experience these effects.

Factors of commitment and beliefs had significant effects on reported use of heroin. The stronger a respondent's perception was towards the popularity and the availability of drugs on the university campus, the more likely they were to report the use of heroin. The more committed an individual reported being to friends, the less likely they were to report heroin use. One indicator of peer influence supported that higher reporting rates of personal heroin use mirrored the use of heroin by the individual's friends.

Factors of involvement, commitment, and beliefs all had significant effects on reported use of hydrocodone without a prescription. Higher levels of involvement that included drinking with friends increased the likelihood of an individual reporting hydrocodone use without a prescription. Beliefs that had a significant effect on the use of this substance support that individuals who used hydrocodone without a prescription are perceived to be more understanding of others who have used drugs. Higher levels of involvement that included going bowling or to the movies with friends decreased the likelihood of an individual reporting hydrocodone use without a prescription. Higher levels of commitment to one's peers also decreased the likelihood of a student reporting use of this substance. All indicators of peer influence in the final model were positively correlated with use of hydrocodone without a prescription. Therefore, peer influence had significant effects on reported use of hydrocodone without a prescription, and an individual who reported use of the drug was more likely to report being influenced to do so by peers.

Factors of involvement, commitment, and beliefs all had significant effects on reported use of Oxycontin or oxycodone without a prescription. The more involved with

one's friends a student reported being, and the more committed to these peer relationships the student reported being, resulted in a lower likelihood of them using Oxycontin or oxycodone without a prescription. Beliefs that had a significant effect on the use of these substances support that individuals who have used Oxycontin or oxycodone without a prescription are perceived to be more accepting of drug use. Indicators included in the PeerInfluenceIndex show that Oxycontin or oxycodone use without a prescription increases as peer influence decreases. However, additional specific indicators in the model show that student who reported using these substances were more likely to report being directly influenced to do so by their friends and were more likely to have friends that have also used the substances.

Factors of involvement, attachment, commitment, and beliefs all had significant effects on reported use of Xanax without a prescription. The more involved with friends a student reported being, the more likely they were to use Xanax without a prescription. The more attached and committed to peers a student reported being, the less likely they were to report the use of Xanax without a prescription. Beliefs worked both ways; some resulted in a higher likelihood of Xanax use without a prescription while others resulted in a lower likelihood, as explained in Stage Three: Part c. All indicators of peer influence in the final model were positively correlated with Xanax use without a prescription; therefore, an individual who reported use of Xanax without a prescription was more likely to report doing so because of influences from friends.

Factors of involvement and beliefs had significant effects on reported use of Adderall without a prescription. Higher levels of involvement with friends resulted in a higher likelihood of reporting Adderall use without a prescription. Stronger beliefs

opposing drug use resulted in a lower likelihood of an individual reporting use of Adderall without a prescription, while sympathy to drug users resulted in a higher likelihood of one reporting Adderall use. All indicators of peer influence in the final model were positively correlated with Adderall use without a prescription; therefore, an individual who reported use of Adderall without a prescription was more likely to report doing so because of influences from friends.

Factors of involvement, attachment, commitment, and beliefs all had significant effects on reported use of LSD or other psychedelics. Higher levels of involvement with friends resulted in a decrease in the likelihood of reporting LSD or other psychedelic use. The more attached or committed to peers a student reported being, the less likely they were to report the use of LSD or other psychedelics. Beliefs worked both ways; some resulted in a higher likelihood of LSD or other psychedelic use while others resulted in a lower likelihood, as explained in Stage Three: Part c. All indicators of peer influence in the final model were positively correlated with use of LSD or other psychedelics; therefore, an individual who reported use of these substances was more likely to report doing so because of influences from friends.

Factors of involvement, attachment, and beliefs all had significant effects on reported use of ecstasy or MDMA. Higher levels of involvement with friends resulted in a higher likelihood of reporting ecstasy or MDMA use. The more attached to peers a student reported being, the less likely they were to report the use of ecstasy or MDMA. Beliefs worked both ways; some resulted in a higher likelihood of ecstasy or MDMA use while others resulted in a lower likelihood, as explained in Stage Three: Part c. Overall, most indicators of peer influence in the final model were positively correlated with use of

ecstasy or MDMA; therefore, an individual who reported use of these substances was more likely to report doing so because of influences from friends.

Factors of involvement had significant effects on reported use of alcohol before turning 21 years old. The more an individual reported going bowling or to the movies with friends, the less likely one was to report use of alcohol before turning 21. Higher levels of reported involvement with friends, including drinking with friends or spending a shopping day or spa day with friends, increased the likelihood of an individual reporting they had used alcohol before turning 21 years old. All indicators of peer influence in the final model were positively correlated with use of alcohol before turning 21 years old; therefore, an individual who reported use of this substance was more likely to report doing so because of influences from friends.

Whether or not the null hypothesis for hypothesis one is rejected or failed to be rejected depends on the specific drug being observed. All four variables of social control had significant effects on reported use of crack or powder cocaine, Xanax without a prescription, and LSD or other psychedelics. There was at least one instance in which each of the four variables did not have a significant effect on reported drug use. However, there was at least one social control variable present in each of the regression models. There were indicators present in each regression model that suggested the reported use of each drug was significantly correlated with variables of peer influence. This supports the hypothesis, as it was hypothesized that associations with drug-using peers ultimately influence the likelihood of college students ever using drugs for recreational and/or non-medicinal purposes, and involvement, attachment, commitment, and beliefs all act significantly in this relationship.

Higher levels of involvement tended to increase the likelihood of a student reporting use of drugs. Higher levels of attachment and commitment tended to decrease the likelihood of a student reporting use of drugs. Beliefs had positive and negative effects on the likelihood of students reporting drug use. Item indicators of peer influence tended to increase the likelihood of an individual reporting drug use.

Hypothesis two: the effects of demographics reported drug use

The second hypothesis stated that a student's reported demographic characteristics would influence the likelihood of them ever using drugs for recreational and/or non-medicinal purposes. Three of the four observed demographics had significant effects on reported use of drugs. Religious attendance was the only one that did not have a significant effect on the reported use of any drugs. Reported use of drugs unaffected by demographic characteristics included marijuana, crack or powder cocaine, and Valium without a prescription. The reported use of Adderall without a prescription was the only drug significantly affected by multiple demographics; gender and race/ethnicity.

Gender was found to have a significant effect on the reported use of amphetamines and methamphetamines, heroin, Oxycontin or oxycodone without a prescription, Adderall without a prescription and LSD or other psychedelics. Males were more likely than females to report use in all these instances. Race/Ethnicity was found to have a significant effect on the reported use of hydrocodone without a prescription, Xanax without a prescription, Adderall without a prescription, and alcohol before turning 21 years old. Students who were non-white were more likely than whites to report use of these substances. Class standing was found to have a significant effect on the reported use of drugs in general and ecstasy or MDMA. Upperclassmen were more likely to

report the use of drugs in general, but lowerclassmen were more likely to report the use of ecstasy or MDMA.

The null hypothesis may be rejected. The reported demographics did have an observed significant effect on reported drug use. However, not all specific drugs reported were affected by these variables.

CHAPTER 5
CONCLUSION

DISCUSSION

This research study explored the variables of social control theory and social learning theory that have the capacity to explain how college students become involved in illicit drug use. The research found evidence to support the most appropriate social control predictors for use of 12 specific drugs, as well as drug use in general. It also explored demographic characteristics often perceived to have significant effects on reported drug use. Evidence supported that a student's reported levels of involvement, attachment, commitment, and beliefs to his or her peers inevitably affected the student's likelihood of reporting drug use. Further findings indicated the attrition-assimilation integration model successfully discovered that an individual can retain high levels of attachment, commitment, involvement, and belief to his or her peers and still be more likely than others to report drug use, particularly involvement and beliefs. The model found that this was possible when the high levels of attachment, commitment, involvement, and belief were attributed to drug-using peers. Specific item indicators enhanced the model's explanation for college student drug use by accounting for peer influences that directly linked an individual's experiences with drug use back to their friends.

As hypothesized, the factors created for the attachment, commitment, involvement, and beliefs variables had significant effects on report student drug use. Although these variables were not significant predictors for the use of *every* type of drug, they were each significant predictors for multiple drugs. The null hypothesis was rejected, as there was statistical significance in the observed relationship between social

control and social learning variables and reported student drug use. Remember, not all of the factors created had significant effects on the reported use of each drug in the final stepwise backward: Wald binary logistic regression models, and the factors that did have significant effects slightly varied according to the specific drug being reported. However, the factors that were significant predictors of an individual's likelihood of reporting drug use were consistent across all observed drugs. The factors that made it into the final regression models also represented all four of the social control/social learning variables. All of this is important because it suggests that the type of involvement, attachment, commitment, and belief that significantly affects drug use is essential to distinguish. Specific forms of these variables are more influential than others on the likelihood of a college student reporting drug use. For example, results indicated that a particular type of involvement with friends stimulated the predictability of illicit drug use, and that was drinking with friends.

As also hypothesized, demographic characteristics were found to be significant predictors in the likelihood of a college student reporting experiences of drug use. Overall, this null hypothesis was rejected as there was statistical significance in the explored relationship. Religious attendance was not significant in the reported use of any of the observed drugs; therefore, this null hypothesis failed to be rejected. Gender, race/ethnicity, and class standing were all found to be significant predictors of drug use. However, none of the drugs observed were significantly affected by more than two demographics in the final regression models, and some of the specific drugs observed in the research were not significantly correlated to any of the observed demographic characteristics. Based on the literature that already existed which explored how social

learning theory, social control theory, and demographics explain various forms of deviant behavior, the evidence presented that supported the effects of these variables on reported drug use in this study was expected.

LIMITATIONS OF THE STUDY

The first limitation of the research study involved the sample. The sample was largely comprised of females (365 out of 577) respondents. This could have played a role in females being more likely to report drug use in general, but it is uncertain. The sample was also a cluster, or convenience, sample rather than a random sample. Although students of various class standings and from various courses were surveyed, the sample was predominantly made up of students enrolled in Introductory Sociology and General Psychology general education courses. There is also the question concerning the generalizability of the study and its findings to other universities across the state, region, and nation. This research focused on the main campus of a single mid-sized, rural university in the south.

Additional limitations of the research relate to the testing of models that explain how peer associations are ultimately responsible for drug use. This study proposed a model that may better explain the effects of attachment, commitment, involvement, and belief to peers on a student's likelihood of using drugs. However, the study did not explicitly look at the variance between this model and the models of Hirschi's social control theory and Akers' social learning theory. The lack of comparison between the variance found in this study and the variance found by Hirschi's work is a limitation of the study. Further conceptualization and operationalization in measuring peer influences on student drug use must be explored in order to legitimate the attrition-assimilation

integration model. While indicators of peer influence did indirectly have significant effects on reported drug use, more evidence is needed to support the notion that high levels of involvement, attachment, commitment, and belief to drug-using peers affects the likelihood of students ever reporting the use of drugs.

TAKEAWAYS FROM THE STUDY

The study provided relevance on two fronts. The first concerned each respondent. This study, which was based on respondent surveys, provided students with the opportunity to share events from their past that influenced who/where they are today. It provided the respondents with the opportunity to disclose experiences they have had with prohibited substances. The study provided respondents the opportunity to open up about their past as much as they choose to do so. It also let them know others are interested in their situations, how these situations came to be, and that there is no judgment, condemnation, or conviction for truthfully sharing their past. The study provided respondents with the opportunity to share their personal experiences, insight into peer group selection, and also their personal experiences, and insight into how they eventually became involved in the use of illicit drugs.

The second front concerned the contributions it provided to society and the surrounding community. The findings are expected to have an impact on the campus community immediately, as well as in the foreseeable future. The study has also added to a growing body of literature relating to the relationships that social learning theory and social control theory share with illicit drug use. The research, thanks to its findings, will help make administration at Arkansas Tech University more aware of the direction they need to proceed in the future with respect to drug abuse counseling and assistance, as

these services are eventually going to need to take root on the university's campus. The study provided supported answers as to which students are most vulnerable to illicit drug use, and to which drugs, during their time at Arkansas Tech University.

The research discovered that a large number of students reported the use of prescription drugs without an appropriate prescription. While reported use of alcohol under age 21 and marijuana were high, they were not far off from expected prevalence rates. However, the use of Adderall, hydrocodone, and Xanax without prescriptions was unexpectedly high. Out of the 577 respondents, 128 (22.2%) reported they had used Adderall without a prescription, 122 (21.1%) reported they had used hydrocodone without a prescription, and 97 (16.8%) reported they had used Xanax without a prescription.

There is a need for drug use policies to be revisited. A look at the university's policies and procedures towards substance use/abuse awareness and punishments must be amended in the following years. The severity of the prescription drug problem by the university's students has now brought to attention. The intention of the study, in part, was to take anecdotal information and provide empirical evidence to support the totality of the culture of illicit prescription drug use. With exceedingly high rates of reported illicit prescription drug use, the university must be prepared for any backlash that may ensue. The addition of counseling services provided specifically for substance use/abuse should be heavily considered by administrative personnel. Provided below are potential policy recommendations. Note, by no means is this a full list of recommendations; it simply serves as a starting point for giving students the full care they deserve.

- Revisit any substance use/abuse awareness policies
- Make sure awareness policies are updated to include dangers of prescription drug use
- Consider incorporating more awareness events into the On Track calendar
- Consider the addition of counselors that specialize in drug use/abuse
- Eventually extend counseling services to around-the-clock
- Revisit the policy towards the number of counseling sessions a student may have in order to better assist the needs of the students
- Encourage students to understand the drastic differences between being "preventive" and "reactive" to situations involving drug use, but how to handle the situation in both instances

FUTURE RESEARCH AGENDA

This study was designed to be expanded on over the next several years. Much more data was collected through the survey than was introduced throughout this thesis. Additional data collected consist of more respondent demographics including year born, marital status, employment status, political identity, traditional/non-traditional student, living location, and roommate status. Data relating to recurrent used of the observed drugs and student perception of drug availability and drug popularity on their campus was also included. Perception of gateway drugs and beliefs about the decriminalization/legalization was part of the survey instrument. Students were also asked to report whether they or any of their friends had ever been legally reprimanded (i.e. fines or arrests) for drugs, as well as asked about their beliefs relating to the development of substance use/abuse counseling services provided through the university (see Appendix I for full reference to survey items). Future research ideas include administering the survey instrument to multiple colleges across the university, as well as administering it to an even number of upper-level and lower-level courses. The goal in doing so would be to add variability so that findings become more reliable. Even further still, future research includes administering the survey to students at other universities

across the state in an attempt to make findings more generalizable. It is plausible to administer a similar survey to community members surrounding the university in the years to come in an attempt to make findings generalizable to a population larger than just college students.

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APPENDIX A
REGRESSION MODELS FOR INDEPENDENTLY SIGNIFICANT DEMOGRAPHICS

Table AA.1--Gender and SpecificDrugUse_Ever5 (Heroin) - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Gender_Recoded(1)	1.105	4.445	.035	3.019
	Constant	-4.080	98.236	.000	.017

a. Variable(s) entered on step 1: Gender_Recoded.

Table AA.2--Gender and SpecificDrugUse_Ever6 (Hydrocodone without a Prescription) - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Gender_Recoded(1)	.429	4.263	.039	1.536
	Constant	-1.464	118.378	.000	.231

a. Variable(s) entered on step 1: Gender_Recoded.

Table AA.3--Gender and SpecificDrugUse_Ever7 (Oxycontin or Oxycodone without a Prescription) - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Gender_Recoded(1)	.696	8.283	.004	2.007
	Constant	-2.089	155.288	.000	.124

a. Variable(s) entered on step 1: Gender_Recoded.

Table AA.4--Gender and SpecificDrugUse_Ever9 (Adderall without a Prescription) - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Gender_Recoded(1)	.793	15.083	.000	2.211
	Constant	-1.561	126.813	.000	.210

a. Variable(s) entered on step 1: Gender_Recoded.

Table AA.5--Gender and SpecificDrugUse_Ever10 (LSD or other Psychedelics) - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Gender_Recoded(1)	.781	8.980	.003	2.184
	Constant	-2.333	158.825	.000	.097

a. Variable(s) entered on step 1: Gender_Recoded.

Table AA.6--Religious Attendance and SpecificDrugUse_Ever10 (LSD or other Psychedelics) - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Religious_Attendance_Recoded(1)	-.771	7.893	.005	.463
	Constant	-1.445	42.213	.000	.236

a. Variable(s) entered on step 1: Religious_Attendance_Recoded.

Table AA.7--Class Standing and SpecificDrugUse_Ever2 (Crack or Powder Cocaine) - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Class_Standing_Recoded(1)	-.823	7.869	.005	.439
	Constant	-1.709	56.855	.000	.181

a. Variable(s) entered on step 1: Class_Standing_Recoded.

Table AA.8--Class Standing and SpecificDrugUse_Ever4 (Valium without a Prescription) - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Class_Standing_Recoded(1)	-.644	4.091	.043	.525
	Constant	-1.992	62.881	.000	.136

a. Variable(s) entered on step 1: Class_Standing_Recoded.

Table AA.9--Class Standing and SpecificDrugUse_Ever6 (Hydrocodone without a Prescription) - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Class_Standing_Recoded(1)	-.472	4.549	.033	.624
	Constant	-.959	27.276	.000	.383

a. Variable(s) entered on step 1: Class_Standing_Recoded.

Table AA.10--Class Standing and SpecificDrugUse_Ever8 (Xanax without a Prescription) - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Class_Standing_Recoded(1)	-.635	7.207	.007	.530
	Constant	-1.135	35.094	.000	.321

a. Variable(s) entered on step 1: Class_Standing_Recoded.

Table AA.11--Class Standing and SpecificDrugUse_Ever10 (LSD or other Psychedelics) - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Class_Standing_Recoded(1)	-.578	4.508	.034	.561
	Constant	-1.593	52.745	.000	.203

a. Variable(s) entered on step 1: Class_Standing_Recoded.

Table AA.12--Class Standing and SpecificDrugUse_Ever11 (Ecstasy or MDMA) - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Class_Standing_Recoded(1)	-1.145	13.981	.000	.318
	Constant	-1.658	55.434	.000	.190

a. Variable(s) entered on step 1: Class_Standing_Recoded.

Table AA.13--Race/Ethnicity and SpecificDrugUse_Ever9 (Adderall without a Prescription) - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Race_Ethnicity_Recoded_2(1)	-.659	7.007	.008	.518
	Constant	-1.076	89.778	.000	.341

a. Variable(s) entered on step 1: Race_Ethnicity_Recoded_2.

Table AA.14--Race/Ethnicity and SpecificDrugUse_Ever12 (Alcohol before Turning 21 Years Old) - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Race_Ethnicity_Recoded_2(1)	-.465	4.796	.029	.628
	Constant	1.368	123.817	.000	3.928

a. Variable(s) entered on step 1: Race_Ethnicity_Recoded_2.

APPENDIX B

REGRESSION MODELS FOR SIGNIFICANT PREDICTOR FACTORS AND SIGNIFICANT DEMOGRAPHICS

Table AB.1--Significant Factors, Gender, and I Have Used Drugs Before - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	IntimateInvolvement_DrinkingWithFriends	.760	24.445	.000	2.139
	Beliefs_AntiDrugUse	-1.059	49.303	.000	.347
	Beliefs_UnderstandingOfDrugUse	.570	14.804	.000	1.768
	Gender_Recoded(1)	-.455	3.933	.047	.634
	Constant	1.327	76.333	.000	3.769

a. Variable(s) entered on step 1: IntimateInvolvement_DrinkingWithFriends, Beliefs_AntiDrugUse, Beliefs_UnderstandingOfDrugUse, Gender_Recoded.

Table AB.2--Significant Factors, Class Standing, and I Have Used Crack or Powder Cocaine Before - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	CampusInvolvementIndex	-.022	.538	.463	.978
	IntimateInvolvement_DrinkingWithFriends	.102	.352	.553	1.108
	IntimateInvolvement_ShoppingOrSpaDayWithFriends	.057	.099	.753	1.059
	IntimateInvolvement_BowlingOrMovieWithFriends	-.305	1.443	.230	.737
	Beliefs_AntiDrugUse	-.762	14.777	.000	.467
	Beliefs_UnderstandingOfDrugUse	.725	13.961	.000	2.064
	Class_Standing_Recoded(1)	-.675	4.669	.031	.509
	Constant	-2.013	35.457	.000	.134

a. Variable(s) entered on step 1: CampusInvolvementIndex, IntimateInvolvement_DrinkingWithFriends, IntimateInvolvement_ShoppingOrSpaDayWithFriends, IntimateInvolvement_BowlingOrMovieWithFriends, Beliefs_AntiDrugUse, Beliefs_UnderstandingOfDrugUse, Class_Standing_Recoded.

Table AB.3--Significant Factors, Gender, and I Have Used Amphetamines or Methamphetamines Before - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Attachment_ToFriends	-.371	3.963	.047	.690
	Commitment_Sacrifices	-.740	9.564	.002	.477
	Beliefs_UnderstandingOfDrugUse	.447	7.147	.008	1.564
	Gender_Recoded(1)	.573	2.314	.128	1.773
	Constant	-3.305	133.876	.000	.037

a. Variable(s) entered on step 1: Attachment_ToFriends, Commitment_Sacrifices, Beliefs_UnderstandingOfDrugUse, Gender_Recoded.

Table AB.4--Significant Factors, Gender, and I Have Used Heroin Before - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	Commitment_Sacrifices	-.916	7.055	.008	.400
	Gender_Recoded(1)	1.256	5.549	.018	3.513
	Constant	-4.389	89.587	.000	.012

a. Variable(s) entered on step 1: Commitment_Sacrifices, Gender_Recoded.

Table AB.5--Significant Factors, Gender, and I Have Used Oxycontin or Oxycodone without a Prescription before - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	IntimateInvolvement_DrinkingWithFriends	.312	4.974	.026	1.366
	IntimateInvolvement_BowlingOrMovieWithFriends	-.709	10.308	.001	.492
	Commitment_Sacrifices	-.498	8.771	.003	.607
	Beliefs_AntiDrugUse	-.275	3.522	.061	.760
	Beliefs_UnderstandingOfDrugUse	.516	11.834	.001	1.675
	Gender_Recoded(1)	.517	3.925	.048	1.677
	Constant	-2.292	145.547	.000	.101

a. Variable(s) entered on step 1: IntimateInvolvement_DrinkingWithFriends, IntimateInvolvement_BowlingOrMovieWithFriends, Commitment_Sacrifices, Beliefs_AntiDrugUse, Beliefs_UnderstandingOfDrugUse, Gender_Recoded.

Table AB.6--Significant Factors, Class Standing, and I Have Used Xanax without a Prescription before - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	CampusInvolvementIndex	-.017	.500	.480	.983
	IntimateInvolvement_DrinkingWithFriends	.372	7.664	.006	1.450
	IntimateInvolvement_ShoppingOrSpaDayWithFriends	.208	2.332	.127	1.231
	IntimateInvolvement_BowlingOrMovieWithFriends	-.213	1.278	.258	.808
	Beliefs_AntiDrugUse	-.669	18.485	.000	.512
	Beliefs_UnderstandingOfDrugUse	.651	17.463	.000	1.917
	Class_Standing_Recoded(1)	-.520	3.984	.046	.594
	Constant	-1.392	25.780	.000	.249

a. Variable(s) entered on step 1: CampusInvolvementIndex, IntimateInvolvement_DrinkingWithFriends, IntimateInvolvement_ShoppingOrSpaDayWithFriends, IntimateInvolvement_BowlingOrMovieWithFriends, Beliefs_AntiDrugUse, Beliefs_UnderstandingOfDrugUse, Class_Standing_Recoded.

Table AB.7--Significant Factors, Class Standing, and I Have Used Ecstasy or MDMA before - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	CampusInvolvementIndex	-.001	.000	.987	.999
	IntimateInvolvement_DrinkingWithFriends	.319	3.553	.059	1.376
	IntimateInvolvement_ShoppingOrSpaDayWithFriends	-.021	.012	.914	.979
	IntimateInvolvement_BowlingOrMovieWithFriends	-.481	2.859	.091	.618
	Beliefs_AntiDrugUse	-.599	10.347	.001	.550
	Beliefs_UnderstandingOfDrugUse	.826	19.571	.000	2.284
	Class_Standing_Recoded(1)	-1.018	9.573	.002	.361
	Constant	-2.188	37.382	.000	.112

a. Variable(s) entered on step 1: CampusInvolvementIndex, IntimateInvolvement_DrinkingWithFriends, IntimateInvolvement_ShoppingOrSpaDayWithFriends, IntimateInvolvement_BowlingOrMovieWithFriends, Beliefs_AntiDrugUse, Beliefs_UnderstandingOfDrugUse, Class_Standing_Recoded.

Table AB.8--Significant Factors, Race/Ethnicity, and I Have Used Hydrocodone without a Prescription before - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	IntimateInvolvement_DrinkingWithFriends	.476	13.952	.000	1.610
	IntimateInvolvement_BowlingOrMovieWithFriends	-.525	8.253	.004	.591
	Commitment_Sacrifices	-.604	15.296	.000	.547
	Beliefs_AntiDrugUse	-.388	8.654	.003	.678
	Beliefs_UnderstandingOfDrugUse	.678	24.404	.000	1.970
	Race_Ethnicity_Recoded_2(1)	-.598	4.991	.025	.550
	Constant	-1.443	103.933	.000	.236

a. Variable(s) entered on step 1: IntimateInvolvement_DrinkingWithFriends, IntimateInvolvement_BowlingOrMovieWithFriends, Commitment_Sacrifices, Beliefs_AntiDrugUse, Beliefs_UnderstandingOfDrugUse, Race_Ethnicity_Recoded_2.

Table AB.9--Significant Factors, Race/Ethnicity, and I Have Used Xanax without a Prescription before - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	IntimateInvolvement_DrinkingWithFriends	.566	16.480	.000	1.761
	IntimateInvolvement_ShoppingOrSpaDayWithFriends	.324	5.203	.023	1.382
	Attachment_ToFriends	-.434	9.787	.002	.648
	Commitment_Sacrifices	-.608	12.110	.001	.544
	Beliefs_AntiDrugUse	-.643	14.947	.000	.526
	Beliefs_UnderstandingOfDrugUse	.743	20.090	.000	2.101
	Race_Ethnicity_Recoded_2(1)	-.787	6.792	.009	.455
	Constant	-1.831	123.748	.000	.160

a. Variable(s) entered on step 1: IntimateInvolvement_DrinkingWithFriends, IntimateInvolvement_ShoppingOrSpaDayWithFriends, Attachment_ToFriends, Commitment_Sacrifices, Beliefs_AntiDrugUse, Beliefs_UnderstandingOfDrugUse, Race_Ethnicity_Recoded_2.

Table AB.10--Significant Factors, Race/Ethnicity, and I Have Used Adderall without a Prescription before - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	IntimateInvolvement_DrinkingWithFriends	.803	36.404	.000	2.233
	IntimateInvolvement_BowlingOrMovieWithFriends	-.292	2.819	.093	.747
	Beliefs_AntiDrugUse	-.626	16.403	.000	.535
	Beliefs_UnderstandingOfDrugUse	.569	14.186	.000	1.766
	Race_Ethnicity_Recoded_2(1)	-.783	7.592	.006	.457
	Constant	-1.402	95.430	.000	.246

a. Variable(s) entered on step 1: IntimateInvolvement_DrinkingWithFriends, IntimateInvolvement_BowlingOrMovieWithFriends, Beliefs_AntiDrugUse, Beliefs_UnderstandingOfDrugUse, Race_Ethnicity_Recoded_2.

Table AB.11--Significant Factors, Race/Ethnicity, and I Have Used Alcohol before Turning 21 Years Old - Variables in the Equation

		B	Wald	Sig.	Exp(B)
Step 1[a]	CampusInvolvementIndex	-.035	2.550	.110	.965
	IntimateInvolvement_DrinkingWithFriends	1.318	37.232	.000	3.736
	IntimateInvolvement_ShoppingOrSpaDayWithFriends	.402	7.105	.008	1.495
	IntimateInvolvement_BowlingOrMovieWithFriends	-.332	4.145	.042	.717
	Beliefs_AntiDrugUse	-.474	13.475	.000	.623
	Beliefs_UnderstandingOfDrugUse	.385	8.242	.004	1.470
	Race_Ethnicity_Recoded_2(1)	-.545	4.722	.030	.580
	Constant	2.204	80.320	.000	9.059

a. Variable(s) entered on step 1: CampusInvolvementIndex, IntimateInvolvement_DrinkingWithFriends, IntimateInvolvement_ShoppingOrSpaDayWithFriends, IntimateInvolvement_BowlingOrMovieWithFriends, Beliefs_AntiDrugUse, Beliefs_UnderstandingOfDrugUse, Race_Ethnicity_Recoded_2.

APPENDIX C

SOCIAL CONTROL/SOCIAL LEARNING VARIABLES AND DEMOGRAPHICS SATURATED LOGISTIC REGRESSION MODELS

Table AC.1--Saturated Model for Factors and Demographics (Gender and I Have Used Drugs before)

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_DrinkingWithFriends	.780	23.770	.000	2.182
Beliefs_AntiDrugUse	-1.051	46.864	.000	.350
Beliefs_UnderstandingOfDrugUse	.562	13.727	.000	1.754
Gender_Recoded(1)	-.423	3.182	.074	.655
Constant	1.338	72.984	.000	3.810

Step 13[a]

Table AC.2--Saturated Model for Factors and Demographics (Gender and I Have Used Heroin before)

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_ShoppingOrSpaDayWithFriends	.662	2.877	.090	1.940
Attachment_ToFriends	-.444	2.949	.086	.641
Commitment_Sacrifices	-.671	3.990	.046	.511
Beliefs_DrugsAtATU	.514	6.705	.010	1.672
Gender_Recoded(1)	1.952	6.847	.009	7.040
Constant	-4.852	67.084	.000	.008

Step 12[a]

Table AC.3--Saturated Model for Factors and Demographics (Gender and I Have Used Oxycontin or Oxycodone without a Prescription before)

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_SpendingTimeWithRoommatesOrFriends	-.314	4.137	.042	.731
IntimateInvolvement_DrinkingWithFriends	.304	4.198	.040	1.355
IntimateInvolvement_BowlingOrMovieWithFriends	-.609	7.076	.008	.544
Commitment_Sacrifices	-.448	6.749	.009	.639
Beliefs_AntiDrugUse	-.334	4.650	.031	.716
Beliefs_UnderstandingOfDrugUse	.534	11.584	.001	1.706
Gender_Recoded(1)	.614	5.113	.024	1.847
Constant	-2.376	139.470	.000	.093

Step 10[a]

Table AC.4--Saturated Model for Factors and Demographics (Gender and I Have Used Adderall without a Prescription before)

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_DrinkingWithFriends	.790	32.777	.000	2.204
IntimateInvolvement_BowlingOrMovieWithFriends	-.376	4.309	.038	.687
Beliefs_AntiDrugUse	-.644	16.598	.000	.525
Beliefs_UnderstandingOfDrugUse	.514	10.696	.001	1.673
Gender_Recoded(1)	.478	3.903	.048	1.612
Constant	-1.815	112.183	.000	.163

Step 12[a]

Table AC.5--Saturated Model for Factors and Demographics (Class Standing and I Have Used Crack or Powder Cocaine before)

	B	Wald	Sig.	Exp(B)
Attachment_ToFriends	-.558	11.752	.001	.572
Beliefs_AntiDrugUse	-.885	18.263	.000	.413
Beliefs_UnderstandingOfDrugUse	.759	16.089	.000	2.137
Class_Standing_Recoded(1)	-.622	3.708	.054	.537
Constant	-2.338	60.681	.000	.097

Step 13[a]

Table AC.6--Saturated Model for Factors and Demographics (Class Standing and I Have Used Xanax without a Prescription before)

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_DrinkingWithFriends	.511	12.836	.000	1.668
IntimateInvolvement_ShoppingOrSpaDayWithFriends	.275	3.732	.053	1.317
Attachment_ToFriends	-.358	6.381	.012	.699
Commitment_Sacrifices	-.534	9.464	.002	.587
Beliefs_AntiDrugUse	-.699	16.885	.000	.497
Beliefs_UnderstandingOfDrugUse	.704	17.079	.000	2.021
Class_Standing_Recoded(1)	-.463	2.883	.090	.629
Constant	-1.666	46.000	.000	.189

Step 10[a]

Table AC.7--Saturated Model for Factors and Demographics (Class Standing and I Have Used Ecstasy or MDMA before)

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_DrinkingWithFriends	.415	5.663	.017	1.515
Attachment_ToFriends	-.403	5.043	.025	.668
Beliefs_AntiDrugUse	-.649	10.170	.001	.523
Beliefs_UnderstandingOfDrugUse	.751	15.558	.000	2.119
Class_Standing_Recoded(1)	-.872	6.570	.010	.418
Constant	-2.316	59.320	.000	.099

Step 12[a]

Table AC.8--Saturated Model for Factors and Demographics (Race/Ethnicity and I Have Used Hydrocodone without a Prescription before)

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_DrinkingWithFriends	.451	12.346	.000	1.569
IntimateInvolvement_BowlingOrMovieWithFriends	-.528	7.783	.005	.590
Commitment_Sacrifices	-.605	15.052	.000	.546
Beliefs_AntiDrugUse	-.368	7.778	.005	.692
Beliefs_UnderstandingOfDrugUse	.672	23.779	.000	1.958
Race_Ethnicity_Recoded_2(1)	-.607	4.982	.026	.545
Constant	-1.437	100.244	.000	.238

Step 8[a]

Table AC.9--Saturated Model for Factors and Demographics (Race/Ethnicity and I Have Used Xanax without a Prescription before)

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_DrinkingWithFriends	.555	15.554	.000	1.742
IntimateInvolvement_ShoppingOrSpaDayWithFriends	.332	5.332	.021	1.393
Attachment_ToFriends	-.434	9.519	.002	.648
Commitment_Sacrifices	-.637	12.966	.000	.529
Beliefs_AntiDrugUse	-.637	14.647	.000	.529
Beliefs_UnderstandingOfDrugUse	.744	19.995	.000	2.105
Race_Ethnicity_Recoded_2(1)	-.864	7.834	.005	.422
Constant	-1.799	118.180	.000	.165

Step 7[a]

Table AC.10--Saturated Model for Factors and Demographics (Race/Ethnicity and I Have Used Adderall without a Prescription before)

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_DrinkingWithFriends	.811	35.522	.000	2.251
IntimateInvolvement_BowlingOrMovieWithFriends	-.324	3.132	.077	.724
Beliefs_AntiDrugUse	-.628	16.228	.000	.534
Beliefs_UnderstandingOfDrugUse	.601	15.319	.000	1.824
Race_Ethnicity_Recoded_2(1)	-.787	7.294	.007	.455
Constant	-1.440	94.320	.000	.237

Step 9[a]

Table AC.11--Saturated Model for Factors and Demographics (Race/Ethnicity and I Have Used LSD or Other Psychedelics before)

	B	Wald	Sig.	Exp(B)
IntimateInvolvement_DrinkingWithFriends	.292	3.318	.069	1.339
IntimateInvolvement_BowlingOrMovieWithFriends	-.769	7.268	.007	.464
Attachment_ToFriends	-.495	9.585	.002	.610
Commitment_Sacrifices	-.462	5.688	.017	.630
Beliefs_AntiDrugUse	-.747	16.370	.000	.474
Beliefs_UnderstandingOfDrugUse	1.031	30.956	.000	2.803
Race_Ethnicity_Recoded_2(1)	-.580	2.709	.100	.560
Constant	-2.558	126.793	.000	.077

Step 7[a]

Table AC.12--Saturated Model for Factors and Demographics (Race/Ethnicity and I Have Used Alcohol before Turning 21 before)

	B	Wald	Sig.	Exp(B)
CampusInvolvementIndex	-.052	4.731	.030	.949
IntimateInvolvement_SpendingTimeWithRoommatesOrFriends	.263	3.483	.062	1.300
IntimateInvolvement_DrinkingWithFriends	1.369	37.154	.000	3.933
IntimateInvolvement_ShoppingOrSpaDayWithFriends	.402	6.810	.009	1.495
IntimateInvolvement_BowlingOrMovieWithFriends	-.388	5.470	.019	.678
Commitment_Sacrifices	-.263	4.246	.039	.768
Beliefs_AntiDrugUse	-.449	11.657	.001	.638
Beliefs_UnderstandingOfDrugUse	.443	10.183	.001	1.557
Race_Ethnicity_Recoded_2(1)	-.550	4.645	.031	.577
Constant	2.372	79.918	.000	10.719

Step

APPENDIX D

IRB CONSENT

- **APPLICATION FOR REVIEW OF HUMAN PARTICIPANTS RESEARCH**

Submit hard copy with signatures to the
Arkansas Tech University, IRB, Jack Tucci, Ph.D., College of Business, Rothwell 445

Email application as an attachment to jwarnick@atu.edu

Principal Investigator(s): *I acknowledge that this represents an accurate and complete description of my research.*

Jericho Ruben McElroy	Jericho McElroy	10-30-15
Name of Primary PI	Signature of PI	Date

Additional Researchers' Names

Behavioral Sciences
Department

Witherspoon Hall 348 407 West Q Street
Russellville, AR 72801
Mailing Address

(479) 438-1022	jmcelroy4@atu.edu
Telephone Number	PI Email address

Adviser (complete if PI is a student): I agree to provide the proper surveillance of this project to ensure that the rights and welfare of the human participants are properly protected.

Sean Huss, Ph.D	Sean Huss	11-2-15
Name of Adviser/Chair (typed)	Signature of Adviser/Chair	Date

Witherspoon 346	shuss@atu.edu	(479) 968-0305
Adviser's Address	Adviser's Email address	Telephone

The Effects of Social Learning and Social Control on Student Drug Use

PLEASE NOTE: All applications should be typewritten and edited prior to submission for review. If sufficient space is not provided below for a complete description of the proposed project, please use additional pages as necessary.

IRB Approval: _____ 11/2/2015
Signature of IRB Chair Date

APPENDIX E

INTRODUCTORY SCRIPT

Hello, my name is Jericho McElroy. I am a graduate student at Arkansas Tech University where I study Sociology with an emphasis in crime and deviance. I am currently working towards earning my Master's Degree where I am interested in collecting information that explores the theories of social learning and social control and the relationship that exist with drug use. I am interested in learning what measures were taken in seeking out peers or peer groups, as well as if an individual's demographics serve as significant predictors in an individual's experiences with illicit substances. Would you be interested in participating in this research study where you will complete a one-time only survey?

APPENDIX F

OFFICIAL CONSENT FORM
Students,

My name is Jericho McElroy and I am a graduate student in the Master of Science – Applied Sociology program. I am studying histories of drug use among college student enrolled in courses at Arkansas Tech University. In this survey, you will be asked to respond to questions that deal with attitudes and experiences that pertain to *prior* drug use. You will also be asked to respond to questions regarding resources on the ATU – Russellville campus.

The survey will take approximately 25 minutes for respondents to complete.

TRIGGER WARNING: Some of the questions throughout the survey relate to personal histories of *prior* drug use, and may result in some emotional distress for some students. If assistance is required at any time, appropriate professional resources are listed below.

Arkansas Tech University Counseling services, located in the Health and Wellness Center, Dean Hall 126. They welcome your calls and visits. Regular hours are from 8:00 a.m. to 5:00 p.m., Monday through Friday.

You may also contact professionals of drug counseling and rehabilitation at:

Counseling Associates, Inc. 110 Skyline Dr. Russellville, AR 72802 (479) 968-1298

OR

Freedom House 400 Lake Front Dr. Russellville, AR 72802 (479) 968-7086

Your participation in this study will supply a more adequate understanding of the patterns in drug use among ATU college students, as well as how to account for the servics the student body demands from the university.

REMEMBER: Your answers are confidential and there is no way to connect your responses to you. Your participation is completely voluntary. You may choose to skip any and all answers as you see fit.

If you have any questions, comments, concerns, or interests in the results of the study, feel free to contact Dr. Sean Huss at shuss@atu.edu or the primary investigator at ATUMasterResearch@gmail.com.

Thank you for your contribution to this significant research regarding the safety and services provided to our university's students.

Sincerely,
Jericho McElroy
Arkansas Tech University

Interviewee Signature and Consent/Permission
Before making the decision regarding participation in this research you should have discussed this study with an investigator, reviewed this form, and had the opportunity to answer questions. Your signature confirms that you received this information, have asked questions, received suitable answers, and that you voluntarily agree to take part in the project.

Participant: By signing this consent form, you indicate that you are voluntarily choosing to take part in this research.

_____	_____	_____
Signature of Participant	Date	Printed Name

Participant's Legally Authorized Representative: By signing below, you indicate that you give permission for the participant to take part in this research.

_____	_____	_____
Signature of Participant's Legally Authorized Representative	Date	Printed Name

(Signature of Participant's Legally Authorized Representative is required for people unable to give consent for themselves.)

Person Explaining the Research: Your signature below means that you have explained the research to the participant/participant representative and have answered any questions he/she has about the research.

_____	_____	_____
Signature of person who explained this research	Date	Printed Name

Only approved investigators for this research may explain the research and obtain informed consent.

A witness or witness/translator is required when the participant cannot read the consent document, and it was read or translated.

APPENDIX G

OFFICIAL SURVEY INSTRUMENT

ALL SURVEYS, COMPLETED OR NOT, MUST BE RETURNED

Please specify below whether you choose to submit your survey response as part of the research study OR choose to have it withheld from the data sample. Note: Any unspecified survey responses will be included in the study sample.

Remember, your answers are confidential and there is no way to connect responses to respondents. You may choose to skip any and all answers as you see fit. All responses are strictly for statistical analysis only.

[ ] I choose to submit my survey response as part of the research study.

[ ] I choose NOT to submit my survey response as part of the research study.

The purpose of this study is to investigate the effects of peer association on an individual's drug use as the topic relates to college students at Arkansas Tech University. We are interested in learning if the measures taken in peer group selection and association, as well as an individual's demographics, serve as significant predictors in an individual's experiences with illicit substances during their college years. Thank You for choosing to take part in this study. Remember, your answers are confidential and there is no way to connect responses to respondents. You may choose to skip any and all answers as you see fit. All responses are strictly for statistical analysis only.

First, we would like to begin by gaining a general background of participating respondents. Please circle one answer for each of the demographic questions below.

1. Are you…? (circle one)

Male Female

2. What year were you born? (write the year in the blank)

_____

3. What is your current marital status? (circle one)

Single (never married)

Separated

Divorced

Widowed

Married

4. What is your current employment status? (circle one)

Not Currently Working

Working Part-Time

Working Full-Time

Retired

5. Which best describes your race/ethnicity? (circle one)

African American

Asian/Pacific Islander

Hispanic/Latino

Native American/Alaskan Native

Caucasian

Middle Eastern

Other (please specify) _____

6. How often do you attend religious services? (circle one)

At Least Once a Week

Two or Three Times a Month

Several Times a Year

Once a Year

Do Not Attend Religious Services

7. Which best characterizes your political identity? (circle one)

Very Liberal

Liberal

Moderate

Conservative

Very Conservative

8. What is your class standing? (circle one)

Freshman

Sophomore

Junior

Senior

Super Senior (5+ years)

9. Are you…? (circle one)

A Traditional Student

A Non-Traditional Student

10. Do any of your high school friends attend ATU? (circle one)

Yes

No (go to question 12 on the next page)

11. Approximately how many of your high school friends attend ATU? (write your answer in the blank)

_____

Next, we would like to know more about your general living situation. Please circle the option that best fits your living situation for each question/statement below.

12. Which of the following best describes your living arrangement? (circle one)

On-Campus Dorm

On-Campus Apartment

Off-Campus Apartment

Off-Campus House

13. Which of the following best describes your roommate situation? (circle one)

I Live Alone

I Live with my Parents/Legal Guardians

I Live with My Spouse

I Live with My Boyfriend/Girlfriend

I Live with My Friends

I Live with Strangers

14. Please indicate whether or not each of the following statements applies to your living situation by <u>checking</u> the options that best describe your living situation. <u>(Check All That Apply)</u>

I have always lived on campus. _____

I have never lived on campus. _____

I have live on-campus and off-campus since coming to ATU. _____

I have always lived at the same address since coming to ATU. _____

I have lived at multiple addresses since coming to ATU. _____

I have always had the same roommate(s) since coming to ATU. _____

I have not always shared the same roommate(s) during my time at ATU. _____

I knew all of my roommate(s) before we lived together. _____

I knew some of my roommates(s) before we lived together. _____

I did not know any my roommate(s) before we lived together. _____

Now we are interested in knowing what activities you enjoy spending time doing.

15. Please indicate to what extent you attend each of the following events during any given week at ATU. (Circle the option that best describes your involvement in university events)

	Never	Sometimes	Frequently	Almost Always
An ATU sporting event (e.g. football game)	1	2	3	4
A Career Services workshop (e.g. Resume Building workshop)	1	2	3	4
An intramural game (watch or play)	1	2	3	4
An Outdoor Campus Recreation event (e.g. rafting)	1	2	3	4
A Greek Life event (e.g. Bid Day)	1	2	3	4
A Resident's Life event (e.g. a luau)	1	2	3	4
An ATU band/choir concert	1	2	3	4
A political event (e.g. Young Democrats' or Young Republicans' meeting)	1	2	3	4
A Student Activities Board event (e.g. Summer Send-Off; movie on the lawn)	1	2	3	4
A Student Government Association event	1	2	3	4
A departmental club or organizational event (e.g. Behavioral Sciences Club)	1	2	3	4
A Campus Ministries event (e.g. CCSC luncheon; BCM sermons)	1	2	3	4
A cultural event (e.g. Food Day; Light the Night)	1	2	3	4
A research lecture/symposium (e.g. departmental colloquium)	1	2	3	4
A drug awareness campaign/event (e.g. Alcohol Awareness Simulator with golf cart)	1	2	3	4

16. Please indicate to what extent you do each of the following during any given week at ATU with friend(s), roommate(s), or neighbor(s). (Circle the option that best describes your level of involvement)

	Never	Sometimes	Frequently	Almost Always
Eat a meal together	1	2	3	4
Go bowling together	1	2	3	4
Go to a movie together	1	2	3	4
Watch TV together	1	2	3	4
Play cards, board games, or video games together	1	2	3	4
Have drinks together at a residence	1	2	3	4
Have drinks together at a bar/tavern	1	2	3	4
Go to a party together	1	2	3	4
Go fishing or hunting together	1	2	3	4
Go shopping together	1	2	3	4
Get manicures, pedicures, facials, etc. together	1	2	3	4
Work on homework together	1	2	3	4

Now we are interested in learning more about the relationships you share with your friends.

17. Please indicate the extent to which you agree or disagree with each of the following statements by circling the option that best represents how you feel about your friends.

	Strongly Disagree	Disagree	Agree	Strongly Agree
I feel very close to all of my friends.	1	2	3	4
It is easy for me to reach out to my friends.	1	2	3	4
I know that I can rely on my friends to help me out of any situation at any time.	1	2	3	4
I connect with my friends on an intimate level.	1	2	3	4
I share personal thoughts and feelings with my friends.	1	2	3	4
I know that I can count on my friends to keep my secrets when I ask them to do so.	1	2	3	4
I feel happiest when I am surrounded by my friends.	1	2	3	4
I spend as much free time with my friends as possible.	1	2	3	4
Members of my peer group rarely miss the opportunity to come together for an event.	1	2	3	4
I am very accepting of new individuals that come into my peer group.	1	2	3	4
I only feel close to a select few of my friends.	1	2	3	4
I try to keep my peer group as reserved from outside individuals as possible.	1	2	3	4
I find it difficult for me to fit in with my friends.	1	2	3	4
I feel as if I constantly have to reaffirm my allegiance to my peers.	1	2	3	4
I do not associate with any others at ATU.	1	2	3	4

18. Please indicate the extent to which you agree or disagree with each of the following statements by circling the option that best represents how you feel about your friends.

	Strongly Disagree	Disagree	Agree	Strongly Agree
I often cancel my own plans in order to spend time with my friends.	1	2	3	4
I participate in events because my friends want to participate, even though I do not personally want to.	1	2	3	4
I allow my friends to pick times to hang out, even when the time may not be the best for me.	1	2	3	4
I allow my friends to talk me into doing things I normally would not do on my own.	1	2	3	4
I devote much of my energy to keeping the relationships I have with my friends.	1	2	3	4
I find myself making subtle attempts to evaluate my position in my peer group.	1	2	3	4
I feel as if I have something to gain from being with my friends.	1	2	3	4
I would not hesitate in lending money or personal items to my friends.	1	2	3	4
I would not feel guilty or embarrassed asking to borrow money or personal items from my friends.	1	2	3	4
I do not mind frequently hosting friendly gatherings or letting friends carpool with me.	1	2	3	4
It is easy for me to remain understanding of my friends' situations.	1	2	3	4
I support the actions of my friends regardless of what the actions are.	1	2	3	4
I do not cast judgment on my friends for their imperfections.	1	2	3	4

We are now interested in knowing more about your opinion towards drug use. Remember, your answers are confidential and there is no way to connect your responses to you.

19. Please indicate to what extent you agree or disagree with the following statements. (Circle the option that best represents your opinion towards drug use)

	Strongly Disagree	Disagree	Agree	Strongly Agree
I feel like I am now more open-minded towards drug use than I was when I started college.	1	2	3	4
My friends have impacted my opinion on drug use.	1	2	3	4
My own history with using drugs has impacted my opinion on drug use.	1	2	3	4
The drugs that are considered illegal today should remain illegal.	1	2	3	4
My friends made me use drugs whenever we were together.	1	2	3	4
I have something to gain by associating with my friends regardless of their history with drugs.	1	2	3	4

20. Please indicate the extent to which you agree or disagree with the following statements. (Circle the option that best represents your opinion towards drug use)

	Strongly Disagree	Disagree	Agree	Strongly Agree
There is no excuse to ever use drugs.	1	2	3	4
Drug use is a problem among college students at ATU.	1	2	3	4
Drugs are easy for students at ATU to purchase.	1	2	3	4
College students should know better than to use drugs.	1	2	3	4
Those that have used one drug are more likely to use other drugs.	1	2	3	4
Individuals that have used drugs are more likely to commit other criminal acts.	1	2	3	4
Individuals that have used drugs have a personal flaw.	1	2	3	4
I believe the laws should be stricter on people that get caught using drugs.	1	2	3	4
Only drug users can relate to fellow drug users and know what it is that they desire most.	1	2	3	4
If I were to take drugs nothing bad would happen to me.	1	2	3	4
College students are inevitably going to find themselves in situations that stimulate drug use.	1	2	3	4
College students should be granted more leniencies when they are caught using drugs.	1	2	3	4
I can relate to college students that get introduced to drug use.	1	2	3	4
Legal penalties are often too strict for drug use charges.	1	2	3	4
Certain drugs should become legalized.	1	2	3	4
The community should do more to understand the unique situations of individuals who have used drugs.	1	2	3	4
The community should do more to assist individuals that have struggled with drug use.	1	2	3	4
Individuals that use drugs are victims of social pressures that are deserving of second chances.	1	2	3	4

College students should be taught the dangers and consequences of drug use upon arriving at ATU.	1	2	3	4
People can change; drugs do not define who you are.	1	2	3	4

Now we would like to ask general questions about drug use by 1) your friends and 2) yourself. Remember, your answers are confidential and there is no way to connect your responses to you.

21. Please indicate whether or not each of the following statements applies to you. (Circle the option that best represents your experiences)

	Yes	No
I have friends that have used drugs before.	1	2
I have friends that have used drugs for as long as I can remember.	1	2
I have friends that used drugs *before* I began hanging out with them.	1	2
I have friends that have hidden their drug use from me.	1	2
I have friends that have sold drugs before.	1	2
I have friends that have sold drugs for as long as I can remember.	1	2
I have friends that sold drugs *before* I started hanging out with them.	1	2
I have friends that have hidden their drug dealing from me.	1	2

22. Please indicate whether or not each of the following statements applies to you. (Circle the option that best represents your experiences)

	Yes	No
I have used drugs before. (Alcohol is a drug)	1	2
I have made my friends aware of my history involving drug use, or lack thereof.	1	2
I first used drugs for non-medicinal/recreational purposes *prior* to associating with my current friends.	1	2
I have used drugs *since* becoming friends with my current friends.	1	2
I have used drugs because my friends initially introduced me to drugs.	1	2
I have experienced influences from my friends to use drugs.	1	2
I have never experienced peer influence towards using any drugs.	1	2
I have only told my closest friends that I have used drugs.	1	2
I have sold drugs before.	1	2
I have sold drugs *since* becoming friends with my current friends.	1	2
I have told my friends that I have sold drugs.	1	2

Next, we are interested in whether or not you have ever used certain drugs. Remember, your answers are confidential and there is no way to connect your responses to you.

23. Please indicate whether or not you have ever used each of the following drugs. (Circle the option that best represents your experiences)

	I Have **NEVER** Used This Drug Before	I Have Used This Drug Before
Marijuana	1	2
Crack or Powder Cocaine	1	2
Amphetamines or Methamphetamines (e.g. speed, crystal meth)	1	2
Valium (without a prescription)	1	2
Heroin	1	2
Hydrocodone (without a prescription)	1	2
Oxycontin or Oxycodone (without a prescription)	1	2
Xanax (without a prescription)	1	2
Adderall (without a prescription)	1	2
LSD or other Psychedelics (e.g. shrooms)	1	2
Ecstasy or MDMA	1	2
Alcohol (before turning 21 years old)	1	2

24. Please indicate whether or not you have ever used each of the following drugs on more than one occasion. (Circle the option that best represents your experiences)

	I Have **NOT** Used This Drug More Than Once	I Have Used This Drug More Than Once
Marijuana	1	2
Crack or Powder Cocaine	1	2
Amphetamines or Methamphetamines (e.g. speed, crystal meth)	1	2
Valium (without a prescription)	1	2
Heroin	1	2
Hydrocodone (without a prescription)	1	2
Oxycontin or Oxycodone (without a prescription)	1	2
Xanax (without a prescription)	1	2
Adderall (without a prescription)	1	2
LSD or other Psychedelics (e.g. shrooms)	1	2
Ecstasy or MDMA	1	2
Alcohol (before turning 21)	1	2

We are interested in knowing which drugs are the most popular among ATU college students. Based on what you have heard or what you have experienced, please indicate how popular each of the drugs listed below are. Remember, your answers are confidential and there is no way to connect responses to respondents.

25. Please indicate the extent to which you agree or disagree with each of the statements below regarding drug popularity. This is based entirely on your perception. (Circle the option that best represents your level of agreement or disagreement)

	Strongly Disagree	Disagree	Agree	Strongly Agree
Students at ATU tend to use Marijuana.	1	2	3	4
Students at ATU tend to use Crack or Powder Cocaine.	1	2	3	4
Students at ATU tend to use Amphetamines or Methamphetamines (e.g. speed, crystal meth).	1	2	3	4
Students at ATU tend to use Valium (without a prescription).	1	2	3	4
Students at ATU tend to use Heroin.	1	2	3	4
Students at ATU tend to use Hydrocodone (without a prescription).	1	2	3	4
Students at ATU tend to use Oxycontin or Oxycodone (without a prescription).	1	2	3	4
Students at ATU tend to use Xanax (without a prescription).	1	2	3	4
Students at ATU tend to use Adderall (without a prescription).	1	2	3	4
Students at ATU tend to use LSD or other Psychedelics (e.g. shrooms).	1	2	3	4
Students at ATU tend to use Ecstasy or MDMA.	1	2	3	4
Students at ATU tend to use Alcohol (before turning 21 years old).	1	2	3	4

Now we are interested in knowing how available drugs are at ATU. Consider the level of difficulty in acquiring each of the drugs listed below. Remember, your answers are confidential and there is no way to connect responses to respondents.

26. Please indicate how difficult or easy you think it would be to get each of the drugs below. This is based entirely on your perception. (Circle the option that best represents your perceived degree of difficulty)

	I Would Not Know How to Get this Drug	Very Difficult	Somewhat Difficult	Somewhat Easy	Very Easy
Marijuana	1	2	3	4	5
Crack or Powder Cocaine	1	2	3	4	5
Amphetamines or Methamphetamines (e.g. speed, crystal meth)	1	2	3	4	5
Valium	1	2	3	4	5
Heroin	1	2	3	4	5
Hydrocodone	1	2	3	4	5
Oxycontin or Oxycodone	1	2	3	4	5
Xanax	1	2	3	4	5
Adderall	1	2	3	4	5
LSD or other Psychedelics (e.g. shrooms)	1	2	3	4	5
Ecstasy or MDMA	1	2	3	4	5
Alcohol	1	2	3	4	5

Next, we are interested in knowing more about your opinion towards the decriminalization of drugs that are currently illegal nationally. Remember, your answers are confidential and there is no way to connect responses to respondents.

27. Please indicate how much you agree or disagree with each of the following statements relating to the legalization of drugs. (Circle the option that best describes your level of agreement or disagreement)

	Strongly Disagree	Disagree	Agree	Strongly Agree
Marijuana should be nationally decriminalized (legalized).	1	2	3	4
Crack and/or Powder Cocaine should be nationally decriminalized (legalized).	1	2	3	4
Amphetamines and/or Methamphetamines (e.g. speed, crystal meth) should be nationally decriminalized (legalized).	1	2	3	4
Heroin should be nationally decriminalized (legalized).	1	2	3	4
LSD and/or other Psychedelics (e.g. shrooms) should be nationally decriminalized (legalized).	1	2	3	4
Ecstasy and/or MDMA should be nationally decriminalized (legalized).	1	2	3	4
Alcohol should have a younger legal drinking age than 21.	1	2	3	4

28. Please indicate to what extent you agree or disagree with each of the following statements. (Circle the option that best fits your level of agreement or disagreement)

	Strongly Disagree	Disagree	Agree	Strongly Agree
I used certain drugs because I wanted a better high than I got from the drugs I used previously.	1	2	3	4
My friends have directly influenced my use of drugs.	1	2	3	4
My friends and I have used the same drugs.	1	2	3	4
Most of the college students at ATU have used the same drugs I have.	1	2	3	4
Certain drugs do serve as gateway drugs to the use of more serious drugs.	1	2	3	4

29. Please indicate the following drugs you believe are gateway drugs that lead to the use of more serious drugs. (Check all that apply)

Caffeine _____

Tobacco _____

Alcohol _____

Marijuana _____

Prescription drugs (i.e. hydrocodone; oxycodone; Xanax) _____

The following response set concerns legal reprimands experienced by 1) your friends and 2) yourself. Remember, your answers are confidential and there is no way to connect your responses to you.

30. Please indicate whether each of the following statements applies to you or any of your friends. (Circle the option that best describes those experiences)

	Yes	No
I have had friends arrested or fined for their involvement in drug use.	1	2
I have been arrested or fined for my involvement in drug use.	1	2
I have had peers drop out of school at ATU due to difficulties stemming from drug use.	1	2
I participated in D.A.R.E. as a middle school or high school student.	1	2

Last, we are interested in learning whether you or anyone you know would ever be interested in attending substance use/abuse counseling provided by ATU. Remember, your answers are confidential and there is no way to connect responses to respondents.

31. Please indicate how likely you or your friends would be to take advantage of these services provided on campus by ATU. (Circle the option that best represents your level of agreement)

	Strongly Disagree	Disagree	Agree	Strongly Agree
I think ATU should provide counseling services that focus on substance use/abuse.	1	2	3	4
If you felt as though you needed it, would you use counseling services provided by ATU for substance use/abuse?	1	2	3	4

Thank You very much for your willingness to participate in this research study. We take pleasure in the fact that you were willing to provide feedback that will be beneficial to the results of this study.

If you have any questions about the research moving forward or its final results, please feel free to contact me via email at: ATUMasterResearch@gmail.com Results pertaining to the research will not be provided until *after* completion of the final product.

If you have any comments or suggestions that you believe might benefit this research study in the future please feel free to provide them in the box below.