2009

EXAMINING CAMPUS CRIME AT VIRGINIA'S COLLEGES AND UNIVERSITIES

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May 4, 2009

EXAMINING CAMPUS CRIME AT VIRGINIA'S COLLEGES AND UNIVERSITIES

A Dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

by

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Acknowledgements

"The path to a Ph.D. involves learning more and more about less and less, until you know everything about nothing…"

These were the words that my colleagues, friends and family saw at the bottom of each of my e-mails for the past four years. I am not exactly sure where I got the phrase from, but it was one of those sayings that held more and more meaning as I continued my graduate studies. Completing my dissertation would not have been possible without the tireless support from my Committee, friends and family.

My Committee

I truly believe I was blessed with the best Committee ever! As they say: "It takes a village to raise a child." Each member had their own unique role in helping me succeed in the dissertation process. First, I must thank my Committee Chair, Dr. Laura Moriarty. Thank you so much for the countless hours you spent providing me with invaluable feedback and direction. It meant the world to me that you always responded so quickly to any questions I had. You always helped me see the bigger picture. My sincerest thanks, Dr. Moriarty! Second, I must thank Dr. Max Bromley who I am so grateful to have had the opportunity to include on my Committee. Your optimism, humor, encouragement, and above all, expertise on all areas of campus security and crime were priceless. Thank you, Dr. B.! Third, I express thanks to Dr. Jill Gordon. Words cannot articulate how much your mentorship and friendship have meant to me over the years. Thank you for taking me under your wing in my early graduate student years and spending so much time helping me understand the multiple facets of pursuing a career in academia. A million thanks to you,

Dr. Gordon! Fourth, thank you to Dr. John Reitzel for all of our "hallway chats"…they meant more to me than you probably realize. It seemed that anytime I was struggling or 'spinning wheels', you were there! Your encouragement and advice always made things better and you always helped me put the whole dissertation process in perspective. Thank you! Last, but certainly not least, I must thank Dr. I-Shian Suen. Again, I cannot express how thankful I am for the opportunity to work with Ivan. He was integral in helping me *truly* understand the statistical process of completing a dissertation. Ivan truly has a gift for teaching and explaining complex concepts. I learned so much more from him than what is reflected on the pages of this dissertation. For that, I am truly grateful—thank you Ivan!

I also want to thank all of my colleagues in the L. Douglas Wilder School of Government and Public Affairs, especially the criminal justice unit. Your support and kindness has never gone unnoticed. Also, I want to thank my students for their support and curiosity--- I love my "job" because of you.

My Friends

I am also blessed with the best friends and family anyone could ask for. These friends were by my side at the drop of a hat, even when they had not heard from me in over a month (or more!) because I was being a hermit. I essentially have two "second families" here in Virginia. First, is my family at Chestnut Oak Stables. Thank you for all of your support from the first time I stepped foot on the farm in 2002. I love all of you. Second, is my family at McCoy Martial Arts Institute (MMAI). You all are the best! Thank you for all the laughs and good times that have kept me sane. I love you all too!

There are, of course, a few individuals that I want to mention. First, I want to extend my thanks to Dr. Kim McQuaid from Lake Erie College. If it were not for him, I probably would not have even begun my graduate studies. His support, humor, and zero tolerance for nonsense have given me a great compass for navigating both academia and life in general. Thanks for teaching me to appreciate the big and small emotional exhales in life, Kim!

A big thank you to my friend and colleague Christopher Kopacki as well! Thanks for always being there as a "sounding board" for me and, of course, for coordinating social outings to help keep me sane along the way! Special thanks also to my best friend Adrienne for all of her support throughout this process. No one could ask for a better friend ("thumbs-up!"). I must give her kudos for reading through my entire dissertation and catching every comma, period, and grammatical error that she possibly could---now THAT is a good friend indeed! Lastly, I must thank Obie for his steadfast support, understanding, and love during the last six months of my dissertation. Thank you for always being there to make me smile and laugh. It has really meant so much to me. Thank you, Obie!

My Family

If it were not for my parents, none of this would be possible. My parents, Jim and Roseanna, have been there for me from day one. Thank you for always encouraging me to do my best and do what makes me happy. Thank you for smiling and nodding even when I was babbling about weird things like "operationalization" and "regression." Thank you for teaching what hard work, responsibility, and dedication is all about. It has paid off. To give

proper thanks to my parents would require a document much larger than this dissertation, but I hope I can sum it up by saying I love you both and thank you for always being there.

I also want to thank my brother, Matthew; my Nana and Papa; G-ma; Auntie Ann and Uncle Randy; Sonny and Linda (and the rest of the Hudson family); Molly and Rich; and, all of my other aunts, uncles and cousins for their support from the beginning. I love all of you. Finally, I want to thank the Lord for giving me the strength to keep moving forward in every aspect of my life.

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Abstract

EXAMINING CAMPUS CRIME AT VIRGINIA'S COLLEGES AND UNIVERSITIES

By Christina M. Barnes, Ph.D.

A Dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2009

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This dissertation examines reported campus crime at Virginia's institutions of higher education. Utilizing secondary data and content analysis, the research seeks to determine the amount and types of crime occurring on Virginia campuses and which correlates explain such crimes. Three sources of campus crime statistics are included and scrutinized in detail, including the Clery Act statistics, Virginia Incident-Based Reporting statistics and campus crime logs. Regardless of data source, findings indicate that the vast majority of reported campus crime is comprised of property offenses. The research argues to separate analyses by campus police departments versus campus security departments for more meaningful findings. For multivariate analysis, the study employs campus crime logs as the outcome measure for reported campus crime. The results indicate that, in all models,

percentage of students living on campus significantly contributes to the explanation and prediction of total, violent/personal, and property crime log offenses reported per 100 students at institutions with either campus police departments or security departments. Additionally, percentage male enrollment was found to significantly contribute to violent/personal offenses reported per 100 students at institutions with campus police departments. Implications of findings and recommendations for policy and future research are discussed.

Chapter 1

Statement of the Problem

Overview of Problem

Higher education institutions have experienced much change in recent years. One of the concerns that has remained constant, however, is the safety of those on campus. Campus crime is an important issue for students, parents, administrators and campus security officials. Academia has become a big business where a positive image is crucial and where safety and security are necessary preconditions to facilitate learning. Any crime occurring on a campus is a serious threat to the perceived safety and economic viability of that college or university. While colleges and universities have long been regarded as sanctuaries from crime, in reality, they are not immune. Crime on college campuses has received increased attention over the past two decades. During this time, the media has played a significant role in raising public awareness of campus crime and in creating a sense that campuses provide unsafe environments by focusing on high profile incidents (e.g., Karp, 2001). Further, recent events at colleges and universities, including the 2007 mass murder of 32 individuals at Virginia Polytechnic Institute and State University (Virginia Tech) and the 2008 shooting at Northern Illinois University killing 5 students, have once again underscored the importance of campus security. In response to this threat, campuses across the nation have undertaken numerous measures to ensure the safety and security of their students, such as improved access systems, student escort programs, security phone boxes, property identification programs and increased numbers of security personnel. Additionally, as a direct response to the Virginia Tech incident, improvements in safety communications protocol

have been implemented involving campus-wide multi-modal warning systems such as sirens and text messaging. However, many of these responses were not necessarily evidence- based.

Crime and victimization have been topics of research for a considerable time. Yet, research on campus crime and victimization only came to the forefront beginning in the late 1970s (see McPheters, 1978). With a few exceptions, any additional campus crime research was not conducted until the early 1990s due to implementation of the Clery Act, a federal law requiring all Title IV funded campuses to provide an annual report on the amount and type of crimes occurring on campus along with other enumerated mandates. After these watershed years of publications, there has only been scattered research looking at correlates of campus crime, with some focusing their attention only on specific types of campus crimes such as sexual assault (see, for example, Fisher, Cullen, & Turner, 2000). As such, much of the literature examining campus crime correlates is outdated and/or limited by focusing on only a small sample size or only upon institutions with campus police departments. Further, the source(s) of data used for examining campus crime by previous researchers is limited. The current research will address some of these concerns by providing a new methodology with a different campus crime data source that will allow institutions with campus police departments and security departments to be examined. Campus environments have significantly changed over the past decade with increases in student enrollment and diversity, technology, and professionalism of campus police and security departments. It is important to determine which factors are still salient in explaining campus crime and whether such factors remain significant regardless of campus crime data source.

Overview of Dissertation

The current study will offer a macro-analysis of campus crime within a theoretical framework utilizing multiple data sources for the dependent variable in creating campus crime rates. The methodology and subsequent statistical models will comprise the specific contributions of the research. The following provides an overview of how the paper is designed to examine campus crime and victimization at Virginia's colleges and universities. The current chapter provides the reader with an introduction to the issue of campus crime and a statement of the problem. The second chapter deals with a review of the literature and relevant theoretical frameworks and the third chapter delineates the research data and methodology.

Literature and Theoretical Frameworks

Chapter Two sets forth a review of both the literature and theoretical frameworks relevant to the current study. Before turning to specific empirical literature, a brief discussion on trends in higher education is given, specifically highlighting the impact of increasing enrollment. The history of campus security and policing is reviewed followed by the specific bearing that September 11 and the Virginia Tech shootings had on campuses.

Next, an overview of the literature is given. The reader will learn that campus crime research did not begin to appear until the late 1970s. After reviewing the literature a number of factors become apparent in influencing campus crime rates including number of individuals living on campus, affluence of institution and student body, demographic characteristics of the student body, impact of alcohol and drugs, and organizations present on campus. Also, contrary to media portrayals, the reader will learn that the amount and types of crime occurring on campuses are less numerous and violent than those found in their surrounding communities and than the nation as a whole. Additionally, the concern over outside perpetrators coming onto

campus to commit crime is mitigated by the fact that the vast majority of crimes on campus are perpetrated by students themselves.

Then, the discussion will turn to the specific crimes that some researchers have chosen to focus in-depth upon, including sexual assault, hate crime, and the threat of terrorism on campus. Similar to patterns across the nation, sexual assault is highly underreported on campuses with the majority of perpetrators being acquaintances to the victim. Hate crime based upon race, religion and sexual orientation comprise the top three motivations for such assaults. Finally, campuses have been identified as vulnerable locations for terrorist attacks due to many different factors. While steps have been taken to better educate key stakeholders on how to respond, it appears much still needs to take place to afford the appropriate amount of security without unduly impinging academic freedom.

Finally, before turning to theoretical frameworks, the chapter will delineate the specific limitations afforded by the presented body of literature. These limitations include absent or limited theory, limited samples with small n-sizes, exclusion of campus security departments, and reliance upon flawed or limited campus crime statistics.

The latter half of the chapter is devoted to discussing relevant theoretical frameworks. This section begins by setting forth the groundwork for viewing campuses as types of communities. A review of the general community literature is followed by an overview of "community" in the campus context. In turn, this provides the basis for introducing human ecology where community is the primary unit of analysis. Specifically, Hawley's (1950) human ecology theory is discussed, which is what Cohen and Felson's (1979) routine activity theory stems from. Routine activity/lifestyle theory is the primary theoretical framework used for the current study. As such, a thorough historical overview of the theory and its evolution is given

before providing discussion on how it can be specifically applied to the campus environment. This is where the research focuses on tests of routine activity theory within the campus context. Finally, theoretical limitations and critiques are delineated. Concerns revolve around the assumption of a motivated offender, whether the routine activity framework is a theory or an approach, use of proxy measures, conducting micro- versus macro-analyses, and whether theory integration is an appropriate action to take.

Current Research Plan

The primary goal of the current research is to provide a macro-level analysis of reported campus crime within a theoretical framework. Specifically, the goal is the development of a model(s) that practitioners and academicians can use in predicting the amount, and more importantly, the *types* of crime that may potentially occur on campuses given certain contextual factors within and surrounding a particular campus. The current study uses quantitative research methodology to carry out a cross-sectional research design with two approaches utilized as methods of data collection: content analysis and secondary data analysis. The research questions at hand include:

- What kinds of crimes are occurring on Virginia's college and university campuses?
- Which factors explain these crimes?

Descriptive, bivariate and multi-variate analyses will be performed to answer these questions. Each data source is explained in detail followed by a discussion of how each variable is measured. Then analytical techniques are described, including data cleaning, variable reduction, descriptive analyses, bivariate analyses, and multivariate analyses. Finally, the limitations of the methodology and data sources are set forth with a focus on the concerns of utilizing agency records, secondary data analysis, content analysis, and the specific limitations of official campus

crime data sources: Clery Act statistics, Virginia Incident-Based Reports, and Campus Crime Logs. Each of these sources is discussed in further detail in Chapter Three. However, a brief description of each is as follows. Clery Act statistics are compiled by the U.S. Department of Education on a yearly basis and are mandatory for all Title IV funded institutions. The types of crimes that are required to be reported are limited in scope because they exclude crimes such as larceny, vandalism, and harassment. Virginia Incident-Based Reports (VA IBR) are available for all campuses with an official police department with the appropriate technology for submitting data to the Virginia State Police (who then aggregate the data and submit figures to the FBI as part of the UCR Program). The crimes reported in the VA IBR statistics include all reported Group A offenses and Group B arrests, which are very comprehensive. Finally, campus crime logs are required by federal law to be maintained by all colleges and universities that maintain an official campus police or security department. These logs should include all crimes reported to campus police or security officials.

Purpose of the Study

In short, the purpose of this study is to determine the demographics of Virginia colleges and universities with campus police and security departments and which correlates determine the amount and types of crime reported at such campuses.

Limitations of the Current Study

> *"The statistics of crime and criminals are known as the most unreliable and difficult of all statistics" (Sutherland, 1947, p.29).*

Limitations exist in every study and the current research is no exception. Delineating such limitations does not mean that the overall study is fatally flawed; rather, when limitations are acknowledged and understood one can interpret findings within appropriate parameters. The current study is limited by the theoretical frameworks and methodological approaches relied

upon. Once again, the theoretical limitations include assumption of a motivated offender, use of proxy measures, conducting micro- versus macro- analyses, and whether theory integration is an appropriate action to take. The current study provides for a macro-analysis of campus crime and thus, does not account for specific individual case dynamics (micro-dynamics).

There are methodological limitations as well. Even though the research is examining a population rather than a sample, the generalizability of the results will be limited to 4-year public and private, and 2-year public college and universities in Virginia. Additionally, the findings are temporally limited to the 2004 calendar year. This is important given that the face of higher education and campus security may have changed significantly since 2004, especially after the events at Virginia Tech in 2007. More importantly, one of the primary limitations of this study is that its outcome measures do not account for unreported crimes or crimes that officials are made aware of but choose not to report. There are inherent limitations when using agency records, secondary data analysis, and content analysis, as well as specific limitations of campus crime data sources. Each will be discussed in detail below.

Agency Records in General

Agency records will be collected via either content analysis or secondary data analysis. In either case, understanding the details on how the information was *originally* collected is the best guard against reliability and validity issues (Maxfield & Babbie, 2009). Specifically, the current research will examine published/public statistics (Clery Act statistics, VA IBR statistics, campus crime logs, SCHEV statistics, etc.) and nonpublic agency records (Virginia State Crime Commission survey data). There are essentially three general limitations to agency records, in that 1) data is socially produced; 2) data is not designed for research; and, 3) error increases with data volume (Maxfield & Babbie, 2009).

First, the sources of data for the current study all involve a social *process* in the manner of collection and recording. Discretionary actions by campus security officials affect how the records are recorded, maintained, and reported. Specifically, the data included within the current research was produced by different campus police and security departments with potentially varying reporting practices, definitions, and measurements. Further, clerical errors will be unavoidable in any large-scale reporting system. It is inevitable that some error will exist whenever making observations on large numbers of individuals (Maxfield & Babbie, 2009). Second, the data is not designed for research in that it is focused on tracking individuals or individual cases rather than aggregate patterns. This is especially true for the campus crime logs. Finally, error will increase as the volume increases. In other words, the more cases formally recorded the greater the likelihood of clerical errors such as typing errors, duplicates, and miscategorization of crimes.

Secondary Data Analysis Limitations

Secondary data analysis involves examining data collected by other researchers and using the data to address new research questions. The benefit of this data collection technique is that it is far less expensive and faster than collecting original data in that it focuses on data *analysis* rather than data collection. One significant concern of this method involves validity. The researcher must be as familiar as possible with the way the data was originally collected, coded and entered. The original data may not precisely measure variables in the manner the secondary researcher wishes. As such, the researcher must assess the validity of all variable measurements to determine if inclusion of particular variables is appropriate. Also, it must be ensured that the variables and units of analysis are appropriate for the research question(s) of the current study and that systematic errors in organizing and reporting data are considered. In general, there can

be several threats to internal validity including selection bias, history, maturation, testing, instrumentation, mortality, and statistical regression. Fortunately, many of these concerns are mitigated by the cross-sectional nature of the current research design. Selection bias is minimized since all 4-year public, 4-year private, and 2-year public colleges and universities are examined rather than a sample. The concern over history does come into play given that the research is examining data pre-Virginia Tech. Operations of campus police and security departments have likely changed significantly since the time this data was collected.

The current research is utilizing a dataset established by the Virginia State Crime Commission. The current researcher is very familiar with how the original data was collected, coded, and entered and received permission to utilize the data set in its entirety. It is argued that the variables extracted from the particular dataset have high validity by measuring what is intended to be measured for the research questions at hand. However, this affirmation is tapered by the fact that the data originally came from a self-report study. Thus, the potential exists for misinformation reported by security officials, as well as typing errors by staff when entering the data. Missing data also is present for questions that were not answered in the original study.

Content Analysis Limitations

Content analysis involves the systematic study of messages. This technique will be used to extract figures for both the Clery Act and VA IBR statistics, as well as to enter and code the latter six months of the 2004 calendar year or all 12 months for security departments that did not submit logs to the Crime Commission. The mode of observation will be manifest where only the visible, surface content is recorded rather than attempting to interpret the underlying meaning. The manifest mode should bring forth stronger reliability because a phrase or word either is or is not present within the campus crime logs, for example. In addition, since there will only be one

coder, there should be a limit on the *variations* of miscoding. In order to address any reliability issues in coding, a test-retest method will be used to establish an alpha-score. Krippendorff (2004) recommends that research should only rely upon alpha-scores above .800, consider scores from .667-.800 and reject any score below .667. It is anticipated that the one-coder "inter-rater reliability" scores will be well above .800.

Validity will also be examined. In particular, face, content, and criterion measures of validity will be considered. Validity will also rely upon the accuracy of the published statistics and the transfer of data within databases. The current research argues that all measures of campus crime boast face validity for the number of crimes *reported* to campus security officials. However, some of the measures are limited in content. For instance, the Clery Act statistics have low content validity due to the exclusion of crimes such as larceny and vandalism. All measures have low content validity when considering the fact that none take unreported crime into account. Content validity concerns also come into play for any department that chooses to not document certain crimes. While each measure of campus crime has its own strengths and weaknesses and is not strictly comparable with others, each measure does, to a certain degree, serve as a cross-validation measure to the others. The specific limitations of the outcome measures will be discussed below.

Specific Limitations of Campus Crime Data Sources

Since the seminal work of McPheters (1978), researchers have examined campus crime and victimization utilizing a number of different methodologies. It is important to recognize that there is no perfect measure of campus crime and the sources from which the variables can be potentially attained bear their own strengths and weaknesses. The three campus crime data sources that are utilized in the current study include the U.S. Department of Education's Clery

Act statistics, Virginia State Police's/FBI's IBR statistics (part of national NIBRS program), and individual college/university campus crime logs. The limitations of each are described below.

Clery Act

As will be discussed later, Clery Act statistics have consistently been criticized by a number of different entities for a multitude of reasons. There are several limitations of Clery Act statistics that need to be recognized. First, the Clery Act captures a narrow view of campus crime because the Act does not require all crimes to be reported. Therefore, many of the most commonly reported crimes, such as larceny/theft, vandalism, threats and harassment, and indecent exposure, are not included which decreases the accuracy of the campus crime picture. Second, in addition to any campus law enforcement authorities, all non-law enforcement personnel, also known as "campus security authorities" (34 CFR 668.46a), are required to report criminal incidents on campus, with the exception of religious and professional counseling personnel. These personnel would then typically include individuals such as residence hall directors and athletic team coaches and directors. As such, the data is not directly comparable to data from the FBI's UCR or NIBRS system, which only collects statistics from police authorities. However, similar to the UCR and NIBRS, the statistics represent alleged criminal offenses and do not necessarily reflect prosecutions or convictions for crime (U.S. Department of Education, 2001).

The Act does not require local police agencies to collect or report crime statistics to campus officials for areas such as streets, parking lots, and sidewalks through or adjacent to campuses. However, the Act requires schools to make a "good faith effort" to count crimes that occur on the streets and sidewalks immediately bordering the campus, even if the incidents were handled by municipal police (34 CFR 668.46 (c) (9)). Also, since the base measure of enrollment

size is the number of undergraduate students, campus crime rates may be overstated since the figure does not account for the number of faculty, staff, graduate students, and visitors. To specify the disparity, if counts for faculty and staff are added to those for students, it is estimated that the average population served by campus law enforcement agencies increases by 20 percent overall and upwards to 35 percent on large campuses (Reaves & Goldberg, 1996). Finally, there are various inconsistencies in reporting due to interpretational differences of crime definitions. For example, even though the Act states that only UCR definitions are to be used in compiling statistics, it was found that such definitions were used by only 40 percent of institutions, with 45 percent using state definitions and 16 percent using other definitions (e.g., local ordinances or institutional) (Lewis & Farris, 1997). Clearly, this may cause certain campus crimes to be categorized inconsistently.

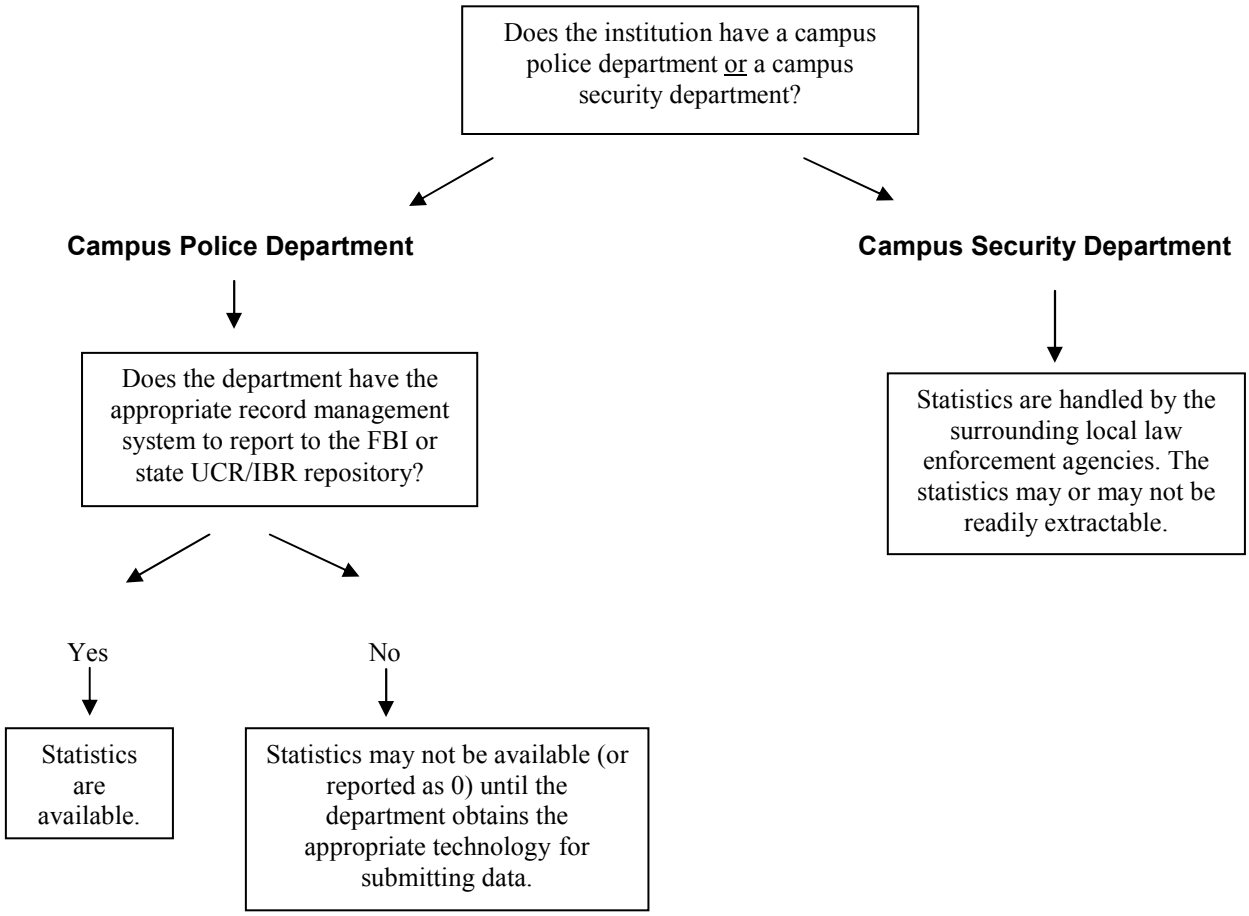
In spite of these limitations, the statistics offer an account of campus crime that is useful to juxtapose with other sources of data. Before the Clery Act requirements were established in 1990, campus crime statistics were limited in availability and comprehensiveness. Additionally, the data are available for every college and university in the nation that is Title IV eligible.

Virginia Incident-Based Reporting System Statistics (VA IBR)

VA IBR statistics (part of national NIBRS program) also have limitations since they do not match the individual incident with the specific outcome. Thus, each crime is not matched with whether an arrest is made, the complaint unfounded, or the crime cleared. VA IBR statistics also do not accurately reflect the volume of clearances each department produces in a given year. Finally, VA IBR statistics are not available for any campus security departments since they are not defined as law enforcement agencies. The reported offenses are typically included within the campus' surrounding county, city or town's statistics. It is often difficult for the surrounding

police or sheriff's department to extract the exact number of reported offenses occurring on a campus in its jurisdiction. The chart below illustrates the availability of NIBRS statistics (or UCR-Summary) to interested researchers (Barnes, 2008: p. 165):

Figure 1: Availability of Virginia IBR Statistics

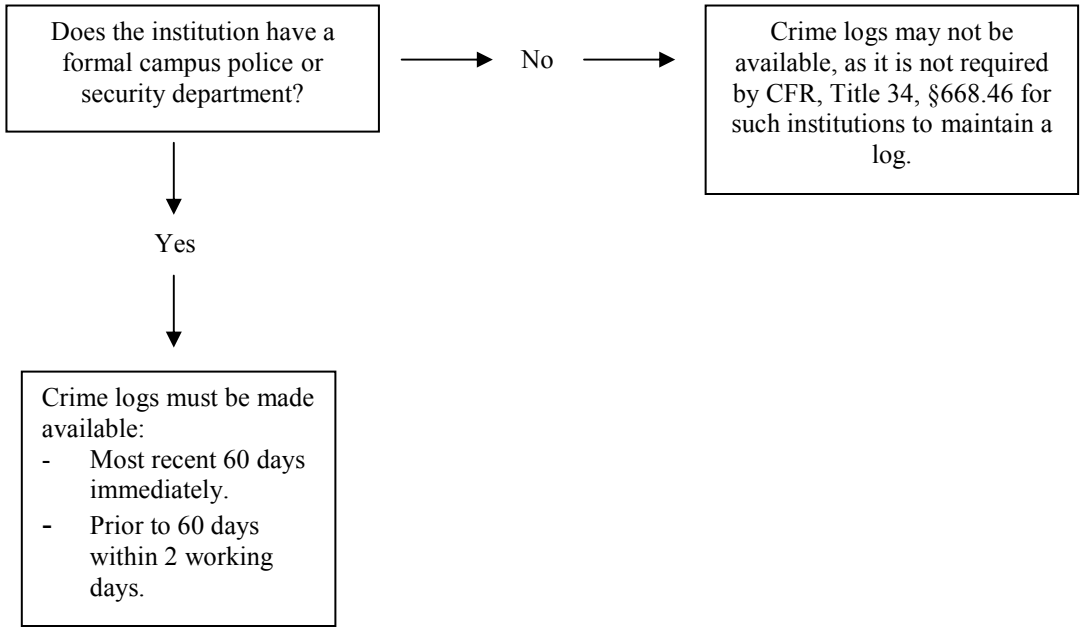


Campus Crime Logs

The primary limitation of crime log data is that its usefulness is entirely dependent on the accuracy and specificity of crime incidents recorded by campus police or security personnel. Second, crime logs can be more difficult to compile and analyze since they come in a variety of formats, from handwritten to complex electronic logs. If comparing more than one institution, it

will most likely be necessary to obtain a decoder in order to understand any "shorthand" for crimes, locations, or dispositions. As compared to Clery Act and VA IBR statistics, crime logs will take a much longer time to prepare for analysis. However, the benefit of a well maintained and highly detailed crime log is that it can provide the most accurate picture of an institution's campus safety since it is the most inclusive. The following chart illustrates the availability of crime logs to interested researchers (Barnes, 2008: p. 166):

Figure 2: Availability of Campus Crime Logs



Summary

The current study is looking at the population of all 4-year public and private, and 2-year public higher education institutions with police or security departments in the Commonwealth of Virginia (n=69). The research is utilizing three different sources for the dependent variable, campus crime: Clery Act Statistics, VA IBR statistics and campus crime logs. Each source has its own strengths and limitations. However, a significant contribution to the literature will be the

inclusion of campus crime logs, which are to be maintained by any college or university with a campus police or security department. To the researcher's knowledge, this is the first time campus crime logs have been considered as a measure of campus crime. Thus, a major gap will be filled since the study's population includes both campus police *and* security departments. The study will also be able to determine which, if any, factors have remained salient in predicting campus crime rates. Finally, findings will inform higher education institutions' administrators and security personnel of factors or combinations of factors that most contribute to or detract from the overall crime rate on their campus. Such information will help develop policies and programs that may address such risk factors for their campus(es).

Chapter 2

Literature Review and Theoretical Frameworks

Overview of Chapter

Before discussing specific academic research and theoretical frameworks, it is important to understand the context in which research on campus crime has been undertaken. It is worthwhile to discuss the changing face of higher education in general and the responses to these changes and other specific issues faced by campus security officials. The chapter will then turn to empirical campus crime research that focuses on internal and external contextual factors contributing to campus crime, as well as, research that has focused on specific campus crimes in depth. The limitations of such research will be discussed. Next, the chapter will turn to some of the theoretical frameworks relevant to the study of campus crime and victimization. Specifically, the discussion of community and human ecology will set the groundwork for introducing the primary theoretical framework for this study: routine activity theory. A thorough discussion of the evolution, application, and limitation of the theory is given.

Trends in Higher Education

There are a number of important changes impacting higher education. First, is the significant increase in student enrollment. To understand where enrollment is today, it is useful to briefly discuss the history of higher education in the United States. Parsons (2007) describes how elementary schools were not universalized until the late 1800s and high schools by 1930. Until the end of the Civil War, only colleges (no universities) existed in the U.S., which were

modeled after Oxford and Cambridge in England. One can then appreciate the development of the university system, mixed public and private systems and then eventually state universities. As such, higher education institutions can be seen as becoming more and more complex as the demand for education increased.

The G.I. Bill and the desire for more educated professionals in the workforce can be seen as an impetus for such demands. For instance, at the beginning of WWII, only 3% (1.5 million) of the national workforce of 50 million attended colleges and universities; however, from 1941 to 1965 attendance by young men increased 300 percent (Riposa, 2003). This also had implications for campus security. Bromley (2007) discusses how existing campus security departments were unprepared for such a quick changing environment in both size and demographics. For instance, increases in the availability of financial aid allowed for higher enrollment for women and minorities. This change also had implications. Smith (1989) notes that, "As the size of institutions grew and the students came to represent a cross-section of the social and economic classes of the nation, the incidence of campus crime likewise increased" (p.10). Another factor during this time period that had a huge impact on higher education was the demise of *in loco parentis* brought forth by the Supreme Court decision in *Dixon v. Alabama Board of Education* (1961). Essentially, the Court's ruling afforded students the same rights as any other adult citizen and higher education institutions had to abide by strict rules and procedures when looking to discipline students. On the other hand, this meant the students would be increasingly held accountable for their actions, including criminal actions (Bromley, 2007). This legal reformation likewise impacted security operations and how students involved in crime were handled on campuses.

Such large increases in enrollment and diversity led to the development of 2-year colleges, also known as community colleges, as well as, online degree programs. The enrollment trend continues to rise. Moore (2005) cites enrollment projections as increasing by 19 percent to 18.2 million students by 2013. He also cites that not only are enrollments continuing to rise but also the *length* of enrollments. Many students are now unable to complete their studies in the traditional 4-year time frame, which has clear fiscal implications for students and families trying to afford higher education. This has led many to consider taking introductory courses at their local community college before transferring to a 4-year college in order to reduce costs (Moore, 2005). Another concern that sparks much debate is the trend towards treating the "student as customer." George (2007) explores the market model's influence in redefining the relationship between professors and students within the college and university. He cites several negative consequences including grade inflation, shortened contact hours, and the redefinition of study time as evidence that the non-salable components of higher education are declining in importance. In other words, is there now a "McDonaldization" of higher education? Finally, some have looked to what higher education will begin to face in the upcoming years. Benjamin (2003) notes five additional changes that higher education will need to address in the near future: globalization, immigration, rising socio-economic disparity, the knowledge economy, and cultural identity. These are all factors that contribute to the changing face of higher education with clear implications for potential issues that campus police and security officials will have to learn to appropriately handle.

History of Campus Security and Policing

As the sense of campus community has continued to evolve, so has the response to security threats on campuses. For excellent reviews of how modern campus policing and security

forces have been transformed by the challenges set forth by social changes, see as examples: Bromley, 2007; Gelber, 1972; Powell, 1981; Powell, Pander, & Nielson, 1994; and, The Carnegie Foundation for the Advancement of Teaching, 1990.

Yale can be seen as establishing the first formal campus police department in 1894. As Powell (1981) describes, the Yale campus comprised a large segment of New Haven City and by the late 1800s there were a growing number of confrontations between New Haven citizens and Yale students which strained "town-gown" relations. One of the worst confrontations emerged after rumors spread that Yale students were excavating recently buried corpses to use as cadavers (Powell et al., 1994, p. 3). All of this dissent eventually led to two New Haven officers being hired by Yale University to form an official campus police department. The two officers operated under a philosophy of "service, protection and establishing good relationships with students and all segments of the campus community" (Powell et al., 1994, p. 4).

Throughout the early 1900s most colleges did not employ security forces on their campuses and instead relied upon local law enforcement to handle such issues. However, by the 1920s and 30s, "watchmen," who oftentimes reported to the physical plant/buildings and grounds departments, were relied upon to protect college property and were asked from time to time to enforce (i.e., report to the Dean of Students) some student regulations revolving around drinking, curfew, and having members of the opposite sex in dormitory rooms (Gelber, 1972; Powell, 1981). The advent of the automobile brought additional concerns to the campus environment. Lack of sufficient space for parking was a primary concern but so was the freedom it afforded students, which was of special "moral" concern for the women on campus (Gelber, 1972). The automobile can also be seen as ushering in a new era of campus security. Gelber (1972) argues

that "the development of the automobile marked the beginning of the 20th century campus security officer" (p. 25).

The 1950s saw an emergence of a slightly more bona fide security presence on campuses, with some hiring retired local law enforcement to head security departments whose primary function still involved protection of college property (Powell, 1981). Furthermore, the development of professional associations for campus security administrators emerged indicating a clear commitment toward increased modernization. For instance, in 1953, the Northeastern College and University Security Association was developed followed by the National Association of College and University Traffic and Security Directors in 1958. The latter eventually became the International Association of Campus Law Enforcement Administrators (IACLEA) in 1980, whose current mission is the advancement of "public safety for educational institutions by providing educational resources, advocacy and professional development services" (www.iaclea.org, 2008). Their membership boasts 1,200 colleges and universities in 20 countries with 2,200 individual memberships (up from only 800 members in the early 1980s as indicated by Powell, 1981).

The late 1960s and early 1970s were a time of great challenge to universities and colleges and their respective security and law enforcement officials. The events of this time period can be seen as a move away from a watchman style of campus policing to the genesis of the law enforcement era of campus policing (Bromley, 2007). Student dissent stemmed from a variety of sources including the Civil Rights and Anti-Vietnam War movements and the demise of *in loco parentis.* According to Powell (1981), this time period saw mass student demonstrations, takeovers of buildings, "sit-ins" at university president's offices, as well as increased property crimes (e.g., vandalism and arson). Aware that their current security operations were unable to

effectively handle such situations, outside law enforcement was oftentimes brought in to deal with the unrest, which frequently exacerbated the tension and violence between all parties involved. This issue was no better illustrated than by the 1970 shootings at Kent State University in Ohio, where four students were killed and nine others injured by the National Guard during an anti-war protest of America's invasion of Cambodia (Report of the President's Commission on Campus Unrest, 1970). After this incident, there was an immediate call for reform. The tragedy underscored the importance of developing professional "in-house" security operations on campuses with officers who could better relate with the campus community (Powell et al., 1994).

The remainder of the 1970s to 1980s saw a further increase in modernization among campus law enforcement and security agencies. However, with the increased presence of security entities on campuses comes the assumption that students would somehow be further protected from injury and death. Hence, the 1980s and 1990s saw the beginning of a barrage of lawsuits alleging that inadequate security services on campus led to such deaths and injuries (Bromley, 2007; Powell et al., 1994). The proliferation of litigation essentially began with legislation resulting from the rape and murder of a student, Jeanne Clery. This case still has a resounding impact upon the entire campus community. On April 5, 1986 Jeanne Clery was raped and murdered in her Lehigh University residence hall by another student she did not know. The ensuing investigation by her parents discovered that Lehigh students were not made aware of many other violent crimes occurring on campus between 1983 and 1986. Clery's parents, along with others impacted by campus crime, lobbied Congress for legislation to correct such problems.

In 1987, the Clery's co-founded "Security on Campus, Inc," a non-profit organization that acts as a watchdog for compliance with the Clery Act, which was passed in 1990. The

original law, the "Crime Awareness and Campus Security Act of 1990" (Public Law 101-542), requires all colleges and universities that receive Title IV funding to 1) publish an annual report containing at least three years worth of campus crime statistics for enumerated crimes; 2) issue timely warnings to the campus community for on-going threats; and, 3) maintain a public crime log if a campus police or security department is present. In 1992, the law was amended to add requirements pertaining to the rights of sexual assault victims. In 1998, the law was amended again and officially renamed the "Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act," which is part of the Higher Education Act of 1965 (20USC 1092(f)). In 2000, the law was amended once again to include "Megan's Law" information for registered sex offenders on campus beginning in 2003. Finally, in 2008, the law was amended again to include information on campus emergency response and immediate warning protocol, increased enumeration of crimes to be included under hate crimes, law enforcement authority and agreements, whistleblower protection, and other technical amendments (Public Law 110-315). Another recent initiative by "Security On Campus, Inc" is obtaining Congressional recognition of September as "National Campus Safety Awareness Month" (Please see Appendix A for a copy of the most current Clery Act in its entirety).

The effectiveness of the Act and its subsequent amendments in achieving intended goals is met with mixed results. Since the implementation of the Clery Act requirements, a number of studies have examined its impact upon admissions procedures, choice of college by students and parents, student behavior, perceptions of law enforcement officials, campus judicial officers and residence life administrators, as well as the specific impact of crime on Virginia campuses and the impact of timely warnings on perceptions of campus safety (see, for example, Gregory & Janosik, 2006). These studies all underscore a lack of awareness among students, administrators

and, more troubling, a lack of overall compliance with the Act's requirements. For instance, one study focusing on two-year colleges found that only 8 of 117 (6.8%) colleges were in full compliance with the Act (Callaway, Gehring & Douthett, 2000). Additionally, there are significant limitations inherent within the required crime statistics of the Act, which will be discussed in detail within the methodology chapter.

Campuses Post-September 11th and Virginia Tech

After the events of September 11th, 2001, the issue of balancing security with liberty came to the forefront for the United States and many other countries across the globe. Schools, colleges, and universities were no exception to this balance. The terrorist acts also forever changed the face of security operations in every facet of law enforcement, including campus police and security. A more thorough discussion of the threat of terrorism on campuses and the need to balance security with liberty to protect academic freedom is included within this chapter and within the policy implications in Chapter Four.

In addition to the concern about violent crime in general on campuses and the potential threat of terrorism, recent mass murder shootings have raised a whole new level of concern for campus security officials, administrators, students, parents, and all other key stakeholders. The Virginia Tech incident can be seen as the 9/11 of the campus community; however, acts such as this are not a new phenomenon and have continued to occur (Associated Press, 2007):

- August 1, 1966: Charles Whitman kills 14 and wounds 31 individuals on the University of Texas at Austin campus over a 1.5 hour period of time after killing his mother and wife earlier in the day;
- November 1, 1991: Gam Lu kills 5 and wounds 2 individuals at the University of Iowa before killing himself;

- August, 15, 1996: Frederick Martin kills 3 of his committee members while defending his thesis at San Diego State University;
- August 28, 2000: James Kelly, a doctoral student, kills 1 professor and then himself at the University of Arkansas;
- January 16, 2002: Peter Odighizuwa, a graduate student, kills 3 and wounds 3 at the Appalachian School of Law after being dismissed by administration;
- October 28, 2002: Robert Flores kills 3 instructors before killing himself at the University of Arizona Nursing College;
- April 16, 2007: Cho Seung-Hui kills 32 and wounds 17 people at Virginia Tech before killing himself. This is currently the deadliest mass shooting in the history of the United States;
- February 8, 2008: Latina Williams kills 2 women before killing herself in a classroom at Louisiana Technical College; and,
- February 14, 2008: Stephen Kazmierczak, a former graduate student, kills five and wounds more than a dozen before killing himself at Northern Illinois University.

It should be noted that even before the events at Virginia Tech, a number of key stakeholders stressed the importance of finding the most effective campus safety policies and encouraging colleges and universities to adopt them (e.g., U.S. Department of Justice, 2005; Virginia State Crime Commission, 2006). After the incident at Virginia Tech, a state-wide panel was called upon by executive order to examine the facts and determine best practices for responding to any similar incidents in the future (Virginia Tech Review Panel, 2007). The panel identified a number of errors that could be improved upon, especially revolving around communication and services available to individuals after the tragedy. Multi-modal communication systems were

recommended including text messaging, instant messaging, e-mail, web-postings, and even reverse 9-1-1 systems to warn the campus community of immediate threats. The panel members noted that in order to advance public safety and meet public needs, Virginia's colleges and universities needed to work together as a coordinated system of state-supported institutions (Virginia Tech Review Panel, 2007).

Summary of Trends and Issues

A number of changes have been seen in higher education over the past century. Each has impacted colleges and universities to varying degrees. Similarly, campus police and security officials have had to respond to these changes and learn how to deal them most effectively. With better understanding of the trends seen in higher education in general and the history of and issues facing campus security officials specifically, the focus now shifts to examining contextual factors and their relationship to campus crime as found in the literature.

Overview of Literature Review

Even though campus security has a somewhat long history within the American context, it was not until the late 1970s that research began to examine the nature of campus crime (e.g., McPheters, 1978). Since then, researchers have concentrated on a number of different areas including internal and external contextual factors affecting campus crime rates, as well as focusing in-depth on specific crimes that occur on campus. While much of the early research lacks theoretical grounding, more recent literature has placed the campus crime phenomenon within an ecological or routine activities framework. Before turning to a discussion of suitable theoretical frameworks for the current research, this chapter will cover the findings of previous literature relating to contextual factors and specific crimes occurring on campuses. A number of factors need to be considered when looking at campus crime rates. Both internal and external

forces can influence the amount of crime occurring on campuses. A review of the literature finds a number of factors that influence crime rates on campus, which will be discussed below.

Individuals Living on Campus

One of the most consistent factors impacting campus crime rates has been the proportion of students living on campus in residence halls. McPheters (1978) conducted one of the first noteworthy studies of campus crime rates using econometric analyses on 38 colleges and universities. He found that, among other factors, the number of students living in residence halls positively influenced campus crime rates. Likewise, other researchers (e.g., Fox and Hellman 1985; Henson & Stone, 1999; Moriarty & Pelfrey, 1996; Sloan, 1992; 1994; Volkwein, Szelest, & Lizotte, 1995) agree that the percentage of students living on campus positively influences the crime rate on campuses. Accordingly, other studies that have examined community colleges, which tend to have no residential students, found a significantly lower crime rate. Bromley (1999) and Volkwein et al. (1995) both found that two-year institutions, which cater to commuter students, generally experience lower amounts of violent and property crime. This notion makes intuitive sense in that students living on campus are exposed to potential victimization 24 hours a day opposed to those who commute to campus for only a few hours per week (Lewis & Farris, 1997).

Affluence of Institution and Student Body

Second, the overall affluence of the institution and student body has been found to increase campus crime rates. Specifically, research indicates that certain financial characteristics of institutions, such as academic quality, cost per term, difficulty in admission and wealth of students, increases the campus crime rate, specifically property crime rates (Fernandez & Lizotte, 1995; Fox & Hellman, 1985; Sloan, 1992; 1994; Volkwein et al., 1995). In essence, it is

postulated that more expensive institutions and students from wealthier backgrounds create more attractive targets for criminals.

Demographic Characteristics of Student Body

Third, the overall demographic characteristics of the student body can lead to an increase in campus crime rates. For instance, a positive correlation between the percentage of male students and crime has been found (Fox & Hellman, 1985), while other studies reflect a positive correlation between the percentage of minority students and the violent crime rate (Sloan, 1994; Volkwein et al., 1995).

Impact of Alcohol and Drugs

Fourth, the negative impact of alcohol and drugs on the campus environment is cited widely in the literature. Alcohol consumption within the campus environment among students has a long standing tradition and is often a widely-accepted practice. The Carnegie Foundation for the Advancement of Teaching (1990) cites how men and women proudly drinking to excess is as old as Bacchus and Beowulf, and that alcohol consumption among students and faculty on campus is an activity that is met with little resistance. The so-called "drinking culture" of campus environments is what makes effectively addressing the problem so difficult. While many of the students have experience with alcohol consumption before entering college, research has shown that there may be something inherent within the campus environment that affords higher rates of alcohol consumption at traditional colleges and universities. For instance, college students binge drink more often than their former high school classmates who did not attend college (Wechsler, Kuo, Lee, & Dowdall, 2000). Other research cites the influence of many students being on their own for the first time. It is argued that students are eager "to exercise their new-found freedom,

and social drinking and drug use fit in perfectly with this desire" (The Carnegie Foundation for the Advancement of Teaching, 1990, p. 39).

While consumption of alcohol is seen as a strong custom in the campus environment and almost viewed as a "right of passage," the detrimental impact of excessive consumption is very clear. Heavy alcohol consumption increases the likelihood of injury, unsafe sexual activity, health problems, and impaired sleep and study time, for instance (e.g., CASA, 2007; Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994). According to one study, it was estimated that there were 1,700 unintentional alcohol-related deaths among the 8 million students enrolled full-time in 4-year colleges during the 1998 calendar year. Additionally, there were nearly 3 million students who drove under the influence of alcohol, 3 million who rode with a drunk driver, over 500,000 who were unintentionally injured under the influence of alcohol, over 696,000 who were hit or assaulted by another student who had been drinking and over 97,000 students who were the victims of alcohol-related sexual assault (Hingson, Heeren, Azkocs, Kopstein, & Wechsler, 2002). Unfortunately, such trends have not decreased in recent years, even with increased awareness. CASA (2007) released an updated report with 2001 figures, which indicated a six percent increase in the number of unintentional alcohol-related deaths, a 38 percent increase in the proportion of students injured as a result of their drinking, as well as increases in the number of alcohol-related rapes, sexual assaults and assaults from other students who had been binge drinking. The report also indicates increases in drug use, specifically abuse of prescription drugs. Specifically, between the years 1993-2005 there was a:

- 450% increase for tranquilizers (Xanax, Valium);
- 343% increase in the abuse of opioids (Percocet, Vicodin, OxyContin);
- 93% increase in the abuse of stimulants (Ritalin, Adderall);

- 52% increase in use of cocaine, heroin and other illegal drugs (not including marijuana); and,
- 50% or more increase in the use of marijuana daily.

There are several fairly consistent determinants of excessive drinking and drug use on campus, including: living on campus (as compared to commuter/community colleges), Greek fraternity or sorority membership (as discussed in more detail below), being Caucasian, being male, being under the age of 23, state of residence, location of a bar within a mile of campus, as well as the ready availability and price of alcohol in the adjoining community (Chaloupka & Wechsler, 1996; Nelson, Naimi, Brewer, & Wechsler, 2005; Sheffield, Darkes, DelBoca, & Goldman, 2005; Weschler et al., 2000; Weschler, Lee, Hall, Wagenaar, & Lee, 2002). Heavy drinking on campus can also have an impact on the surrounding campus communities. For instance, one study reports that neighbors living near colleges are more likely to report a lower quality of life due to noise, disturbances, vandalism, drunkenness, vomiting and urination stemming from heavy alcohol use (Weschler et al., 2002). With these factors in mind, some researchers call for an environmental approach for the surrounding community to reduce some of the negative second-hand effects of heavy alcohol consumption. In particular, these researchers suggest a reduction in marketing practices aimed at college students along with effective controls of price, availability and access, as well as control of fraternities and off-campus parties (Chaloupka & Wechsler, 1996; Kuo, Weschler, Greenberg, & Lee, 2003; Nelson et al., 2005; Weitzmen, Nelson, Lee & Weschler, 2004; Weschler et al., 2000). Such controls may lead to a reduction in substance consumption and improvements in "town-gown" relations.

More imperative to the research at hand is the increased likelihood of victimization, especially for assaults and rapes. Studies have consistently shown that alcohol and drugs are

implicated in the majority of violent campus offenses (e.g., Marcus & Swett, 2003; Siegel & Raymond, 1992; Sloan, 1994). For instance, Sloan (1994) notes that over 95 percent of these types of offenses committed on campuses involve alcohol or drugs. Findings such as these may have had an impact on the alcohol/drug enforcement on many campuses. Hoover (2003) notes that drug and alcohol arrest rates on campuses have consistently increased since 1991 and that increases in these types of arrests are likely attributed to tougher enforcement on campuses. The CASA report (2007) also notes increases in enforcement with a 21 percent increase from 2001 to 2005 in the average number of alcohol-related arrests per campus. Specifically, in 2005, alcohol-related offenses comprised 83% of campus arrests.

Organizations Present on Campus

Fifth, certain types of organizations on campus can affect campus crime rates. As cited above, research has consistently found that institutions with a higher number of national social "Greek" fraternities and sororities on campus tend to contribute to the impact of alcohol consumption and levels of crime on campuses (e.g., CASA, 2007; Caudill, Crosse, Campbell, Howard, Luckey, & Blane, 2006; Chaloupka & Wechsler, 1996; Sloan, 1992; Weschsler et al., 2000). Some studies have sought to determine if there is a difference in the amount of substance abuse between those in Greek systems versus non-members. CASA (2007), for instance, found that fraternity and sorority members are significantly more likely than non-members to drink, binge drink, drink and drive, use marijuana, use cocaine, or smoke. These activities, as discussed earlier, are all factors that can impact the campus crime rate. For example, Sloan (1992) found that institutions with a higher number of national fraternities and sororities on campus tend to have higher levels of campus crime.

Campuses and Their Surrounding Communities

Campus crime has been analyzed in terms of both crime rate comparisons to the larger community and based on the location of the institution. Consistently, this body of literature reveals lower overall rates of campus crime compared to rates in the general community (Bromley 1992; 1995; 1999; Fox and Hellman, 1985; U.S. Department of Education's Report to Congress, 2001; Volkwein et al., 1995). To illustrate, the U.S. Department of Education's 2001 Report to Congress stated that, "…our nation's colleges are safe. In nearly every category of crime for which data were collected, college campuses showed lower incidence of crime than comparable data for the nation as a whole" (p. 13). For a more specific example, Bromley (1992) used UCR statistics to compare campus crime rates of Florida's largest public institutions to the crime rates of cities and counties located within the same geographic regions. In each comparison, universities were found to have lower crime rates than the cities and counties in which they were located.

In general, crimes are not only less common on campuses, but also less violent. Numerous studies have consistently indicated that violent crime rates are substantially lower than the communities that surround them and than the nation as a whole (Bromley, 1995; Reaves & Goldberg, 1996; Sloan, 1992; 1994; Volkwein et al., 1995), and that property offenses, specifically larcenies, constitute the overwhelming majority of campus crime (e.g., Brantingham & Brantingham, 1994; Henson & Stone, 1999; Lewis & Farris, 1997; Siegel & Raymond, 1992). This is a finding that is supported by both official and victimization data.

It must also be noted that the mix of crimes varies somewhat by location. For instance, Fox and Hellman (1985) observe that as campuses become more urban, their proportion of violent crime rates tend to be higher. McPheters (1978) also concludes that campus proximity to

urban areas with high unemployment rates is a good predictor of campus crime. Additionally, Fernandez and Lizotte (1995) found that if the surrounding community has a prevalence of robbery or motor vehicle theft, the campus would typically have higher rates for those crimes as well. Such concerns are outlined within the framework of the "spill-over" theory, insinuating that factors in the community "spill-over" onto the campuses affecting crime. However, Volkwein et al. (1995) also find no support for this theory and indicate that campus crime appears to be "relatively independent of crime and poverty in the surrounding community" (p. 667). Although there is concern over community offenders on campus, it is important to recognize that the vast majority of offenders committing crimes on campus are its own students (Siegel & Raymond, 1992; Sloan, 1994). As such, one may conclude that the majority of crimes committed on campus are perpetrated by fellow students.

Specific Campus Crime Foci

While the research discussed above focuses on campus crime in general, other studies have focused on specific categories of crimes occurring on campus including sexual assaults, hate crimes and the threat of terrorism.

Sexual Assaults on Campus

Looking at research on general victim reporting practices of college students, only between 40 to 70 percent of students report their victimizations to campus authorities (Sigler & Koeler, 1993; Sloan, Fisher, & Cullen, 1997; Trojanowicz, Benson, & Trojanowicz, 1988). Further, research has found that certain crimes are underreported more than others. Sexual assault is one such crime that remains highly underreported across the nation (Rennison, 2002). Research supports this trend on college campuses as well. Rapes and sexual assaults are an area that several campus crime researchers have turned their specific attention toward, with particular

focus on female victimization. These researchers highlight the fact that students, specifically women, are exposed to higher risks of sexual victimization on campuses (Fisher, Cullen, & Turner, 2000; Fisher, Daigle, Cullen, & Turner, 2003; Karjane, Fisher, & Cullen, 2002; Koss, Gldycz, & Wisniewski, 1987). Koss and colleague's (1987) research is considered the seminal work in this area. They disseminated a Sexual Experiences Survey to a national sample of 6,159 students at 32 institutions. They found that nearly 54% of females experienced some form of sexual victimization; whereas, 21.5% of men revealed engaging in some form of sexual aggression toward a female. They also tracked respondents' experiences to the age of fourteen and discovered that nearly 28% of females reported experiencing and 8% of males reported perpetrating an act that would meet the legal definition of rape.

There are a number of factors that have been found to potentially increase a woman's likelihood of victimization. For instance, being under the age of 21, white, residing in a sorority house, using illicit drugs, drinking heavily in high school, attending an institution with high rates of episodic drinking, being unmarried, living on campus, number of sexual partners, engaging in heavy episodic drinking and being a victim of sexual assault before the start of the current school year have all been shown to increase the likelihood of sexual assault or victimization while intoxicated (Banyard, Plante, Cohn, Moorhead, Ward, & Walsh, 2005; Buddie & Testa, 2005; Fisher, Cullen, & Turner, 2000; Mohler-Kuo, Dowdall, Koss & Wechsler, 2004). These studies also indicate that women are less likely to report the crime when the perpetrator is an acquaintance, which is the situation for the majority of sexual assaults on campuses. For example, in one study, 90 percent of rape victims reported that the perpetrator was an acquaintance (Fisher, Cullen, & Turner, 2000). Some research has further examined barriers to reporting sexual assaults by college students. Sable, Danis, Mauzy and Gallagher (2006) found

that both college women and men rated 1) shame, guilt, embarrassment, not wanting friends/family to know; 2) concerns about confidentiality; and, 3) fear of not being believed as the most important barriers to reporting. Gender-specific differences revealed that men refrained from reporting due to fear of being judged as homosexual and women were more likely to refrain due to fear of retaliation by the perpetrator.

Hate Crimes on Campus

Other studies have looked at hate crimes, defined by the Federal Hate Crime Statistics Act of 1990 as, "crimes motivated, in whole or in part, by hatred against a victim based on his or her race, religion, sexual orientation, ethnicity, national origin or disability" (Wessler and Moss, 2001, p.17). Three primary sources of data for hate crime on campuses include the FBI's Uniform Crime Report hate crime statistics, U.S. Department of Education's Campus Security Statistics, and the International Association of College Law Enforcement Administrators' (IACLEA) annual survey on campus crime statistics. For instance, based on available statistics from the FBI in 2006, data indicate that 52 percent of hate crimes on campuses were motivated by race, 19 percent by religion, 16 percent by sexual orientation, 13 percent by ethnicity/national origin and 1% based on a disability (FBI, 2007).

Threat of Terrorism on Campuses

College and university campuses have been identified as high-risk targets for both foreign and domestic terrorists (Boynton, 2003; U.S. Department of Justice, 2005; Walker & Davis, 2005). There are many reasons why campuses would be targeted. For instance, they can be seen as "soft targets" where, if attacked, extensive media coverage and emotional reaction would ensue (Dorn, 2003). Many colleges and universities can also be seen as boasting a wide array of

risks. For instance, the U.S. Department of Justice (2005) cited the following factors which can increase vulnerability:

- High public visibility and accessibility;
- Permanent and transient populations;
- Classified/sensitive or historical documents;
- Sponsored activities and events drawing large numbers of people;
- Individuals and facilities dedicated to nuclear medicine, biochemistry, medicine, defense, technology, international affairs, engineering, communication, public safety, and transportation, for example;
- Extensive international connections and/or international student bodies;
- Overseas campuses;
- Open environments with many campuses' facilities open 24 hours a day; and,
- New students arriving each semester with few systems in place to check backgrounds.

Given some of these potential vulnerabilities, one is urged to ask how prepared campuses are for a terror threat on campus. Findings from a recent survey administered to U.S. campus police executives indicated that 83.6 percent were only *somewhat* to *not adequately* prepared for a campus terrorism incident (Walker & Davis, 2005). Furthermore, only a little over half reported participating in one to two anti-terrorism training classes and less than 23 percent having a specialized unit on campus to deal with such threats. With this in mind, it appears that campus police executives and others responsible for securing campuses could benefit from any tool designed to identify risks, assess vulnerability and develop responses.

While ensuring security on campuses can be seen as a straightforward benefit, there are also potential costs. To illustrate, after the events of September 11th, the increased tracking,

monitoring and access to students' records can be appreciated, especially upon foreign students and exchange visitors (e.g., SEVIS in Forte, 2003). Increases in monitoring were met with claims that such actions impinged upon student privacy. Further, professors at both small and large institutions became scrutinized as subjects of terrorist investigations or for discussing terrorism in their classrooms (see, for example, Mulhauser, 2001; Smallwood, 2001). It is not to argue that such actions are completely unwarranted (see de Russy, 2006); rather, it is argued that allowing security to overshadow liberty can lead to a "slippery slope" of unintended consequences. So, the key question becomes: How much governmental intervention is appropriate in the campus environment? While this specific question is somewhat beyond the purview of the current study, the issue will be touched upon within the policy implication discussion in Chapter Four.

Limitations of Prior Research

There are several limitations that the presented body of literature brings forth, to include 1) absent or limited theory; 2) limited samples with small n-sizes; 3) exclusion of campuses with security departments; and/or, 4) narrow data collection sources for gathering campus crime statistics. In the past, studies on campus crime and victimization have been plagued with a lack of theoretical grounding. However, more recently, researchers have begun to base the study of campus crime on theories such as ecological or routine activity theory (e.g., Fisher, Sloan, Cullen, & Lu, 1998; Siegel & Raymond, 1992; Sloan, 1992; 1994; Volkwein et al., 1995). Some studies have relied upon secondary data analysis of UCR statistics, which has its own methodological challenges (e.g., Bromley, 1995; 1999; Fernandez & Lizotte, 1995; Fox & Hellman, 1985; McPheters, 1978; Sloan, 1992; 1994), while others have attempted to uncover the "dark figure of crime" with victimization surveys via self-report or telephone interviews (e.g., Brantingham & Brantingham, 1994; Fisher et al., 2000; Henson & Stone, 1999).

Regardless of which methodology is employed, each approach taken alone is limiting and is not able to shed light on the entire phenomenon of campus crime. While the focus of this research is upon reported campus crime data, it will later be recommended that it is necessary to juxtapose officially reported statistics with other dimensions of measurement. Linkages between the presented body of literature and specific variables included in the current research are delineated in Chapter Four.

Overview of Relevant Theoretical Frameworks

There are a number of potential theoretical explanations for campus crime. While previous research has failed to *consistently* employ a theoretical framework, research that has is based in an ecological or routine activity framework/lifestyle (e.g., Fisher, Sloan, Cullen, & Lu, 1998; Siegel & Raymond, 1992; Sloan, 1992; 1994; Volkwein et al., 1995). The current research will take a similar approach. The goal of this section is to provide an overview of these theories and how they apply to the campus domain, while outlining some of the general and specific limitations of each framework.

Campus as a Community

For purposes of this study, it will be assumed that the campus environment is a type of community. This is an important assumption since community is the basic unit of analysis for Hawley's (1950) human ecology theory, which is the basis for routine activity theory. As such, a brief discussion is warranted to give an overview of the definitional issues, evolution, and other concerns surrounding the sociological concept of "community."

Evolution and Definitional Concerns

A number of sociologists have looked at the concept of community over the past century (e.g., Bernard, 1973; Durkheim, 1964; Etzioni, 1995; Frankenberg, 1966; Marx, 1971; Parsons,

2007; Tonnies, 1955; Weber, 1978). Early theorists often defined the concept of community in dichotomous terms, of which two will be discussed in further detail. Durkheim (1964) was very influential in the development of this literature as he focuses on how differing forms of social solidarity emerged into communities. He examines two varying extremes: mechanical and organic solidarity. He describes how mechanical solidarity thrives in very small, isolated groups where homogenous members are united by their likeness; whereas, as social density and other factors relating to industrialization and modernization increase, mechanical solidarity is replaced with organic solidarity. Organic solidarity is comprised of heterogeneous individuals who are very different and focus on interdependencies with the focus on specialization, rather than a group of generalists working towards one common goal as seen in mechanical solidarity.

While Durkheim was a very important contributor to the community literature, the other theorist that probably had the most *direct* impact was Tonnies (1955). He again set up a dichotomous differentiation between community (*Gemeinschaft)* and association *(Gesellschaft).* Tonnies saw these as existing at strictly opposing ends of a dichotomy. *Gemeinschaft* implies that real ties of interdependence and emotions between people exist and help form an organized entity that is typically linked to a territory. Interrelations are personal, intimate and based on common interests. A rural village would be an excellent example of this (Day, 2006). *Gesellschaft*, on the other hand, refers to a relationship that focuses on convenient exchanges among individuals in a boundaryless, contractual manner. These types of exchanges can occur once someone moves into a larger area of interrelations (i.e., a city or with increased modernization). This relationship is typically impersonal and focuses on specialization. As such, commercial or business transactions might typify *Gesellschaft* (Day, 2006). Also, with the

increase in modern communications in many of today's societies (i.e., internet, text messaging) a move toward more *Gesellschaft* relationships and interactions may be argued.

It was not until the mid-1960s that researchers began to develop the notion of constructing the concept of community into a *continuum* rather than a dualistic perspective. Frankenberg (1966) developed a continuum that ranged from "truly rural" to "thoroughly urban." Essentially, the more urban a community becomes the less redundancy in social relations and the more simple, specialized, and narrow-minded the focus and interrelations amongst members become. So, the movement away from the "truly rural" community toward urban is painted with the notion that traditional community is lost along the way.

Given the influence of some of the aforementioned theorists, numerous others have attempted to create a solid definition of community. In short, community can be seen as enveloping a vast number of differing definitions. Day (2006) provides an excellent overview of the problematic nature of the community concept. Some definitional examples he cites include:

- "A territorial group of people with a common mode of living striving for common objectives" (Durant, 1959, as cited in Day, 2006).
- "A specific population living within a specific geographic area with shared institutions and values and significant social interaction" (Warren, 1962, p. 2, as cited in Day, 2006).
- "A sense of common identity, enduring ties of affiliation and harmony based upon personal knowledge and face-to-face contact" (Newby, 1983, p. 52, as cited in Day, 2006).

This leads Day (2006) to question whether community is a real phenomenon or goal that is seemingly possible but never achieved. For readers who have seen the movie "Funny Farm" with Chevy Chase, one can appreciate how the dysfunctional rural community comes together to

create a "Norman Rockwell"-like community so the couple can sell their home to outside buyers. The couple was trying to sell "community" by bribing the local community members to participate in the facade. There seems to be an underlying consensus on what a community might include, yet it is nearly impossible to concretely operationalize. These definitional concerns have led some researchers to question the usefulness of the term. Probably the best summary of this paradox is given by Mayo (1994, p.51): "It [community] seems to describe everything and therefore nothing."

Day (2006) also argues that many community theorists always paint the traditional community in a positive, utopian light and therefore any movement away from such community (i.e., through modernization, for example) is somehow negative and detrimental to society. He also cites how the term is used in political rhetoric for "fostering positive feelings" about a program (e.g., community policing) or a group of people (e.g., the gay and lesbian community). Some modern advocates of community have called for its "revival," as they argue that "it" has somehow been lost in today's society (e.g., Etzioni, 1995; Tam, 1998). Etzioni (1995) argues that the notion of community is "dead" due to excessive individualism, and greed and believes that individuals should be selfless and allow for the common good to supersede all other interests so community can once again be instilled. Others argue that community is not lost, but rather has evolved into new forms by adapting to modern circumstances. For instance, Young (1990) discusses how most individuals in today's society have a vast array of affiliations, associations, and allegiances that are, in essence, small communities that can coexist and intermingle with one another. In other words, community has evolved with technology, globalization and overall modernization and can, thus, "wear many different hats". Given the above discussion in the context of this research, one may ponder whether the campus community has gone through a

similar metamorphosis: mechanical to organic, *Gemeinschaft* to *Gesellschaft,* or running the continuum from each extreme and/or coexisting and intermingling in a collective manner.

Community in the Campus Context

Some research has examined the concept of a campus community (e.g., Sloan, 1992; The Carnegie Foundation for the Advancement of Teaching, 1990). Sloan (1992) cites the campus as a type of "community within a community," which is somehow set apart from the larger city, county, or town in which it is situated. He agrees that campuses share a number of basic characteristics that are present in any other community; however, he also cites that there exist some striking differences including the demographics of the population, political considerations, bureaucratic structure and day-to-day activities making the scope of the campus community narrower.

Another study conducted by the Carnegie Foundation for the Advancement of Teaching (1990) outlines what they believe a "campus community" or "community of learners" should look like. Similar to Etzioni (1995), they call for a "search for renewal" and a "compact for community." They go so far as to delineate six overarching principles that should guide decision-making on campus and define the type of community every higher education institution should strive to become:

- ***Purposeful community***- a place where faculty and students share academic goals and work together to strengthen teaching and learning on the campus;
- ***Open community***- a place where freedom of expression is uncompromisingly protected and where civility is powerfully affirmed;
- ***Just community***- a place where the sacredness of the person is honored and where diversity is aggressively pursued;
- ***Disciplined community***- where individuals accept their obligations to the group and where well-defined governance procedures guide behavior for the common good;

- ***Caring community***- a place where the well-being of each member is sensitively supported and where service to others is encouraged; and,

- ***Celebrative community***- one in which the heritage of the institution is remembered and where rituals affirming both tradition and change are widely shared (pp. 7-8).

The above discussion of community in general and the campus community specifically provides an appropriate segue to the following discussion on human ecological theory where community is a vital unit of analysis. The current research recommends that future research should further examine the relationship of community literature within a campus context.

General Ecological Perspective and Hawley's Human Ecological Theory

Routine activity theory is somewhat unique in its intellectual roots as compared to other criminological approaches in that it is grounded primarily in human ecology, where the primary unit of analysis is, in fact, community (Hawley, 1950). Human ecology is a specialization within the broad field of ecology. Scientific ecology went through three phases with a focus on plants in the late 1800s, to animals in the 20th century, and eventually humans in the early 20th century (Hawley, 1950; 1986). Many in the early human ecological school-of-thought, such as Shaw and McKay, focused on spatial analysis of crime rates where communities are seen as territorial units and offender motivation is taken into consideration. This is where the aggregate ecological perspective also emerged. The ecological perspective looks at patterns of where, when and how crime occurs. The primary focus, then, is on offenses rather than offenders and how the large-scale characteristics of a place bear some relationship to large scale patterns of behavior, such as crime (Brantingham & Brantingham, 1991; Sloan, 1992). Again, this perspective is rooted in the work of the Chicago School and focuses on several aggregate variables found to influence crime in study after study. These factors include poverty (most significant), percentage non-white, proportion youthful males, crowded housing (density), mobility, unemployment levels, family

composition, education, citizenship and gender (e.g., Byrne & Sampson, 1986). Such variables and/or proxies of such variables provide support for some of the variables utilized in the current study.

Amos Hawley, also a human ecologist, takes a different approach and was the first to develop a working definition of human ecology. Specifically, Hawley (1950) focuses on community as an organization of human relationships and activities over time and space. He examines community structure and its temporal elements, including rhythm: regular periodicity in which events occur; tempo: number of events per unit of time; and, time: coordination of rhythms and tempos (Hawley, 1950, p. 289; Cohen & Felson, 1979). He and other human ecologists view life as not an individual but an *aggregate* phenomenon. Hawley also sets forth two types of organizations in a community relating to adaptation by individuals residing within: symbiosis and commensalisms. Symbiosis refers to mutual dependence among unlike organisms and commensalism refers to "eating from the same table" or individuals that make similar demands on the environment that compose the web of life. This notion is further applied to routine activity theory and elaborated in a later piece (Felson & Cohen, 1980). Until the late 1970s, Hawley's theory was never applied in relation to the analyses of criminal violations, but rather to macro-analyses of human populations. It was not applied until Cohen and Felson (1979) extend Hawley's work to analyze the structure of direct-contact predatory violations. With this application of human ecology, the formal routine activity theory is yielded and provides an eventual framework for examining campus crime.

Routine Activity Theory Overview

Beginning in the late 1970s, some research began to move away from emphasizing the role of offender motivation, instead focusing attention upon factors increasing the opportunities

for criminal acts to occur. Two perspectives emerging from this transformation were the lifestyle/exposure-to-risk theory (Hindelang, Gottfredson, & Garofalo, 1978) and routine activity theory (Cohen & Felson, 1979). Both perspectives can be seen as falling under a more general opportunity model and are highly complementary with one another. In addition, both share the belief that crime is a non-random event with lifestyles and routines of potential victims increasing the likelihood of contact with likely offenders, thus, increasing the chances of victimization. Some researchers have based their findings within a "lifestyle-routine activities" approach (e.g., Fisher, Sloan, Cullen, & Lu, 1998), as will be discussed later.

Brief Overview of Initial Lifestyle/Exposure Theory

While not focusing in great detail on the lifestyle approach and its specific framework, it is still important to appreciate the complementary nature of lifestyle research findings (Hindelang et al., 1978) with Cohen and Felson's work. Essentially, the lifestyle hypothesis predicts that younger persons, males, and singles are more likely than older persons, women, or married individuals to frequent places outside of the home where guardianship is low and proximity to offenders is high, in turn, increasing the likelihood of victimization. In a sense, their notion of the household being relatively safer than other locations is confirmed by Cohen and Felson's (1979) work, discussed below. However, they note that households that are victimized or households where another member has been victimized, have increased chances of victimization as compared to "victimization-less" homes. This finding suggests that a link exists between household and personal victimization. While lifestyle theory is an important consideration in evaluating victimization, the primary theoretical framework focused upon hereafter is the routine activity theoretical framework.

Historical Overview of Routine Activity Theory

Routine activity theory is somewhat unique in its intellectual roots as compared to other criminological approaches. Specifically, it is grounded chiefly in human ecology with a specific application of Hawley's (1950) study of communities, as discussed earlier. Cohen and Felson (1979) were the first to extend Hawley's theory to the analysis of criminal violations and are credited with formally articulating and coining the identification of "routine activity theory." Their work splits from traditional criminology in the sense that it provides a means for explaining criminal events with scant consideration of offender motivation. They are specifically interested in direct contact predatory violations, which are defined as "illegal acts in which someone definitely and intentionally takes or damages the person or property of another" (Glaser, 1971, p.4, as cited by Cohen & Felson, 1979). It should be noted that they use the word 'violation' rather than 'crime' to ensure a direct reference to an event and to avoid the ambiguity of the term 'crime.'

The primary premise of their theory is that criminal events require the convergence in space and time of three minimal elements: likely offenders, suitable targets, and lack of capable guardianship. As such, it is a micro-level explanation, which emphasizes that a *lack* of any one element is enough to prevent a violation from occurring. It is also noteworthy that they use the term "target" rather than "victim," which implies that people and property are seen as exactly the same, with a place in space and time. The role of proximity and exposure to crime is also underscored. A detailed examination of each element will be provided within the campus context later in the paper.

Despite the inherent micro-level construction of the theory, it has been applied to macro-analyses of crime numerous times in the literature. In fact, Cohen and Felson (1979) applied

their theory to a macro-analysis of crime rate trends from 1947-1974. Their findings indicate that increases in crime rates are due to factors such as female labor force participation and single-adult households. In essence, the dispersion of activities away from households and families increases the convergence of the three minimal elements, thus increasing the overall crime rates. Suggesting that the household is somehow safer than other places confirms the general findings of related lifestyle theory research mentioned above (Hindelang et al., 1978).

Further Macro-Level Analyses

Naturally, refinements of the theoretical model began to appear throughout the 1980s and beyond. Soon after the seminal work of Cohen and Felson (1979), additional macro-level studies and discussions ensued, as described below. Specifically, the consequence of modernization, focus on leisure activities, and consideration of offender are highlighted.

Consequence of Modernization

In the following year, Felson and Cohen (1980) continue their argument that mere spatial analysis is theoretically inadequate. Undertaking similar macro-analyses of social indicators and burglary rate trends, they achieve parallel findings. However, worthy of attention are their discussions on the nature of crime, identification of target suitability elements and modernization.

First, they note that they treat criminal inclination as a given and focus instead on crime as an event existing as a routine activity of everyday life. In this sense, they are in agreement with Durkheim's (1965) assessment of crime being "normal." By building upon a rational choice foundation, they view the majority of criminal events as rational acts. Second, they outline four components of target suitability consisting of value, visibility, access and inertia. These elements of target suitability are fleshed out further and refined in subsequent studies. They also further

apply the work of Hawley (1950) in explaining the interdependence between offender and victim as a symbiotic predatory relationship.

Finally, they set forth a useful discussion regarding the overall notion of modernization and how technological advances benefit both offenders and suitable targets/guardians alike. They discuss how modernization contributes to the increasing convergence of the three minimal elements of criminal events. They also cite the irony of predatory crime: a "by-product of freedom and prosperity" as evidenced in the routine activities of everyday life (p. 404). With this in mind, routine activity theory, as assessed by Cohen and Felson, can be seen as providing an alternative modernization theory that can be evaluated against the works of others (see, for example, Durkheim, 1964; LaFree, 1999). Unfortunately, a more detailed discussion of other modernization theories is beyond the scope of this paper.

Leisure Activity Focus

Messner and Blau's (1987) study provides another good example of routine activity theory carried out at the macro-level. In this study, the focus is upon leisure activities engaged in at home versus at locations considered to be "risky." Specifically, it is hypothesized that participating in leisure activities at home reduces victimization risks, whereas participation in leisure activities outside the home increases victimization risks. This hypothesis is based in the findings of earlier routine activity and lifestyle theory research citing the household as a less risky location compared to most other locations (Cohen & Felson, 1979; Hindelang et al., 1978). Findings indicate, at a macro-level, the more people go outside the home for leisure activities, the higher the rate of victimization. Hence, incorporating the notion of leisure activities into routine activity theory can provide an explanation for overall rates of crime.

Consideration of Offender

Gottfredson's (1981) theoretical article is a useful contribution to the routine activity literature in that he formally articulates the compatibility of his earlier lifestyle/exposure theory with routine activity theory. In particular, concepts of lifestyle and routine activities can be seen as "one mechanism," where social structural arrangements with varying amounts and types of exposure for individuals and objects lead to variations in crime rate trends. He also cites the need for additional refinements and direct measures for all relevant theoretical concepts of routine activities.

However, departing from the work of Cohen and Felson (1979), he sees the etiology of victimization and offending as overlapping. When taking offender motivation into consideration, Gottfredson stresses that it is unlikely that all persons and objects across space and time, with absolute exposure, are equally desirable. Hence, this underscores the rational choices of offenders in target selection. He concludes by recognizing the reciprocal benefits of understanding both victims and offenders; whereas, Cohen and Felson (1979) maintain offender inclination as a given.

Linking Macro- and Micro- Dimensions

While second generation routine activity research further examines macro-level analyses, several others begin to explore the micro-level dimensions of the theory in conjunction with aggregate indicators. In particular, the movement toward a general victimization theory and the distinction between lifestyle and demographic factors is appreciated and discussed below.

Towards a General Victimization Theory

Cohen and colleagues' (Cohen, Kluegal, & Land, 1981) article represents one of the first attempts to consider individual activity patterns in conjunction with community structure in

explaining victimization risks. Specifically, they look at how income, race and age relate to the risk of predatory crime victimization. They argue that the relationships among these dimensions are more complex than given credit, where those thought to be most vulnerable (elderly, minorities and poor) are not necessarily the most likely to be victimized.

They set forth an elaboration of Felson and Cohen's (1980) four characteristics of target suitability. In particular, they focus on the mediating role of risk factors, including target exposure, proximity, guardianship, and attractiveness. They transfer these risk factors into related theoretical assumptions. For instance, for target exposure, the related assumption is, "All else equal, an increase in exposure leads to an increase in victimization risk" (p. 508) and so forth.

Finally, they conclude by claiming a promising development towards a more general theory of victimization. While they concede that the original lifestyle theory (Hindelang et al., 1978) provides a good foundation for a general theory of victimization, they argue that it overemphasizes the role of lifestyles as related to social inequality effects on victimization risks.

Lifestyle versus Demographic Factors

Sampson and Wooldredge (1987) provide an even stronger illustration of and argument for linking micro- and macro-level dimensions of household and personal victimization. They specifically examine the variations in victimization risks associated with demographic characteristics, lifestyle-routine activities (e.g., nights out per week, hours per week house empty, household appliances), community context (e.g., percentage single households, family disruption and unemployed), as well as social cohesion factors (friendship networks, local roots, and residential stability). The results support a *'multi-level' opportunity model* of predatory

victimization, where factors within each measurement category listed above account for victimization risks.

Unlike previous research, however, their findings indicate that demographic and structural variables have the most significant direct effect on victimization. Theoretically, these findings go against a routine activity theory premise where such factors' significance should have diminished when lifestyle and opportunity variables are included in the model. The findings do not indicate that lifestyle variables are null and void, but rather they are less significant than age, sex, and urbanization variables in explaining victimization risks. Finally, the researchers call for more direct measures of community-level variables instead of mere inferences for theoretical concepts, as relied upon by previous research. As such, the focus can now turn to the research that concentrates on refining and improving measurements.

Focusing on Measurement Refinements

From the late 1980s onward, the literature is characterized by a distinct focus on the refinement of measures in helping to explain various types of victimization. Massey and colleagues (Massey, Krohn, & Bonati, 1989) provide an examination of property crime from a routine activity approach. As suggested by previous research, they attempt to develop more rigorous empirical measures of routine activity concepts. They contend that previous research has been far too reliant upon demographic characteristics as proxy variables for targets and guardians. Their findings provide weak support for routine activity theory because, similar to previous findings (Sampson & Wooldredge, 1987), demographic variables were found to be more significant than routine activity indicators. Specifically, routine activity measures such as "weeknight activity" and "whether home during the day" did not mediate the relationship among demographic variables of age, race and victimization. They were especially discouraged to see

that their improved measures of guardianship (e.g., job, home on weeknights) were not significant in the analysis, unlike other study findings (see Cohen & Felson, 1979; Hindelang et al., 1978; Miethe, Stafford, & Long, 1987).

Most importantly, in their discussion, Massey and colleagues insinuate that routine activity should be seen as an "approach" or "perspective", rather than an actual theory. In order to become a theory, they argue that conceptual deficiencies will need to be addressed. Further, they claim that the role of the motivated offender should not be dismissed and should be incorporated in some manner, whether directly or indirectly, into future analyses. Other research argued for routine activity's ability to explain violent crime as well.

Kennedy and Forde's (1990) study is a response to the assertions made by an earlier piece of work (Miethe et al., 1987), where it is argued that routine activity theory is most useful in providing an explanation for property crimes rather than violent crimes. Kennedy and Forde disagree. While they agree with the previous research's description of violent crime as interpersonal, conflict-ridden, and spontaneous, they believe that violent crime is still subject to the particular lifestyles and risk exposure of potential victims.

The authors examine a large national Canadian victimization survey that includes more detailed measures of routine activities as compared to national U.S. victimization survey data. Their findings are quite different from Miethe and colleagues (1987). When testing the effects of demographical variables on assault victimization, all were significant; however, there was a poor fit to the data. On the other hand, once routine activity variables were added to the model, there was a marked improvement in the fit of the data. So, it appears that routine activity measures do provide an explanation of personal victimizations as evidenced in previous studies (Messner & Blau, 1987; Sampson & Wooldredge, 1987). Finally, they contend that regardless of whether

property crimes occur more often due to opportunity and personal crimes occur more often due to conflict, both are still explained by routine, lifestyle and exposure to risk.

Theory Refinement and Integration

By the late 1980s, refinements in routine activity theory and movement towards theory integration can be appreciated. This section will briefly highlight these progressions by focusing on a sampling of works illustrating the refinement of routine activity theory as a criminology of places, as well as integration within social disorganization and feminist theoretical frameworks.

Toward a Criminology of Places

Sherman and colleagues (Sherman, Gartin & Buerger, 1989) argue for a refinement of routine activity theory, focusing on the criminology of places. They believe that the most appropriate unit of analysis is place, rather than individual and household data, given Cohen and Felson's (1979) original emphasis on spatial and temporal ecology. While previous studies have presented data on victimization risks in certain places, the authors assert that these risks are not linked to the amount of time spent in various locations. As such, they inquire as to whether places are indeed criminogenic and attempt to provide a more complete description of variation in crime across places. They define place as: "…a fixed physical environment that can be seen completely and simultaneously, at least on its surface, by one's naked eye" (p.31).

Sherman and colleagues further justify their alternative unit of analysis (place) based on the observation that a large amount of reported crime appears to take place in a few locations. Specifically, after examining dispatch records, they find that 50 percent of calls occur in 3 percent of places and predatory violations, such as robbery (2.2%), rapes (1.2%) and auto thefts (2.7%), occur in even fewer locations. They also find that displacing motivated offenders is not enough to displace crime; rather, the offenders need to be displaced to other places where there

are suitable targets and weak guardianship. A place-specific approach suggests that targets can be made less suitable and guardianship can be increased to limit the supply of motivated offenders. Sherman and colleagues believe that changing the routine activities of places is more effective and easier to implement than changing the routine activities of persons. With this notion, they cite public policy implications and suggest that future research employ longitudinal analyses to examine crime in places over time.

Integrating Routine Activity Theory with Social Disorganization Theory

While integration of routine activity theory with other theories is mentioned in the literature, Smith and colleagues (Smith, Frazee, & Davison, 2000) provide one of the first attempts toward integrating the two spatial theories of crime: routine activity and social disorganization theories. The suggestions for integrating these particular theories stem from those desiring to examine the link between motivation of offenders and opportunity, with consideration of how individual predisposition interacts with such opportunity.

The researchers attempt to empirically determine whether interaction effects exist between routine activity measures (individual risk factors) and social disorganization measures (neighborhood factors) in explaining street robberies. Using the "face block" as their unit of analysis, they find several interaction effects between the two theories' variables. In other words, support is found for street robberies from both routine activity and social disorganization theory. However, it should be noted that the level of explanation afforded by each theory varies. Smith and colleagues find that street robbery *potential* is better explained by social disorganization than by routine activities, whereas actual street robbery is predicted by both social disorganization and routine activities of individuals. In sum, while previous work has been somewhat pessimistic regarding integration based on interaction effects (see Miethe & McDowell, 1993, as cited by

Smith et al., 2000), this research shows more promise. Integration of the feminist perspective is discussed below once the domain-specific literature is introduced.

Specifying Subclasses of Crime

Up until this point, most studies have concentrated on the broad victimization categories of "violent crime" and "property crime", which arguably include very heterogeneous events. Lynch and Cantor's (1992) piece is a good example of efforts to examine more specific subclasses of property crime. The researchers conduct separate analyses for burglary and household larceny to see if different opportunity models predict the two property crime subclasses. Importantly, the authors introduce a number of various geography levels to their opportunity model, including municipality, neighborhood, block and housing unit. They also introduce a control variable for "dangerousness of the block," which is measured by five different categories: urban areas with 1) high violent and property crime rates, 2) high property crime rates, 3) low crime rates, 4) rural areas; and, 5) other areas. The results indicate that different opportunity models for each subclass of crime exist, with the significance of measures varying by each subclass. They also find that some elements are a function of neighborhood and some a function of block. With these findings, the authors recommend that future studies consider more specific subclasses of crime and consider including multiple levels of geography in their analyses.

Domain-Specific Examinations

Until the early 1990s, few domain-specific studies utilizing the routine activity theory were undertaken (for exception, see Lynch, 1987). During this time, some research began to look at routine activity theory as an explanation for workplace victimization. Wooldredge and colleagues' (Wooldredge, Cullen & Latessa, 1992) study represents one of the most rigorous

tests of the theory, as it relates to workplace victimization by focusing on differences in personal and property victimizations among faculty members at one university. This was one of the first applications of the theory to the campus environment. Their findings indicate that routine activity theory accounts for variations in the likelihood of workplace victimization among faculty members. They specifically find that exposure variables predict higher victimizations for faculty who spend more time on campus at night and on weekends, have more students in class, walk alone more often, and socialize with students outside of class. Guardianship variables predict that faculty members who have offices removed from other occupied offices, who do not teach in the buildings where their offices are located, and whose buildings are not secured are more likely to be victimized. The authors suggest that more studies are needed to specify their model further and that examination of other workplaces and domains should be undertaken. A few additional studies incorporating aspects of routine activity theory and various crimes on campus have also been conducted (see Fisher & Wilkes, 2003; Fisher, Sloan, Cullen, & Lu, 1998; Jackson, Gilliland, and Veneziano, 2006; Mustaine & Tewksbury, 1999; Schwartz & Pitts, 1995; Tewksbury & Mustaine, 2003).

Schwartz and Pitts' (1995) article demonstrates a preliminary effort towards an integrated feminist routine activity theory. The authors specifically relate this approach to campus sexual assaults. They argue that sexual assaults are rarely discussed in the routine activity literature (cf. Messner & Blau, 1987), with a majority focusing on property and nonsexual personal crimes. They also note that the majority of data derives from either official police statistics (e.g., Messner & Blau, 1987; Sherman et al., 1989) or large national victimization surveys (e.g., Kennedy & Forde, 1990; Miethe et al., 1987). In contrast, they employ a small-scale victimization survey to study sexual assaults on college campuses.

Focusing on theory, they discuss how a feminist approach views the three essential elements of routine activity theory. The motivated offender element is evidenced by the high rate of sexual assaults occurring on campuses. The lack of guardianship is seen in the transition of colleges and universities away from *loco parentis* and by college males acquiring values that validate sexual assaults. Finally, suitable targets are seen as being primarily women. Schwartz and Pitts focus their hypotheses on this third element.

Lifestyle factors predicted by a feminist routine activity theory, such as females drinking more often and befriending males who they know get other women drunk for sexual purposes, can make women more likely to be sexually victimized. These specific factors were confirmed in their analyses and were reasonably successful (75.5%) in classifying females reporting serious victimization versus those reporting coercion or no victimization. The authors stress that the findings should not be interpreted as a way to blame the victim; instead, it reveals how motivated males search for women engaging in unsafe behaviors.

Finally, Schwartz and Pitts note the scant routine activity research examining offender motivation. Under feminist-routine activity theory integration, however, motivation is a key element. Thus, additional theory is needed to explain the presence of likely offenders on college campuses, so future empirical tests of such a theory can be undertaken. They also argue for the development of more specific and relevant measures of the population being studied.

Mustaine and Tewksbury's (1999) study further illustrates the importance of considering a feminist explanation for predatory victimizations and accounts for some of the suggestions made by previous research in this area. They specifically focus on the issue of stalking, which is scarcely addressed in the routine activity theory literature. They seek to test the theory's predictive abilities using specific lifestyle activity measures and interactions. Their results

indicate support for routine activity theory. In particular, employment status, residential location, substance use, and employed measures of self-protection account for variations in the incidence of stalking for college women.

Mustaine and Tewksbury (1999) provide more specific measures of activities relevant to the college student population as suggested by previous research (Schwartz & Pitts, 1995) and stress measures that are not significant predictors of stalking, especially demographics, in their analysis. In other words, it is not so much the demographic make-up of stalking victims, but rather their routines and who they associate with. They recommend that longitudinal studies be undertaken to clarify the causal relationship between predictors and responses, as well as additional measures particularly focusing upon offenders' characteristics, which other research has indicated should be considered.

Fisher, Sloan, Cullen and Lu's (1998) study provides an excellent application of the lifestyle-routine activities approach in examining the level and sources of students' victimizations. They found that the risk of property victimization is increased by proximity to crime, target attractiveness, exposure, and lack of capable guardianship. Violent victimizations are predicted primarily by a lifestyle emphasizing high levels of partying on campus at night and engaging in recreational drug use. While their dependent variables consisted of property and violent victimization, they set forth a 3-tier categorization of independent variables including, individual-, institutional- and adjacent community-level measures, which will inform the current research.

Tewksberry and Mustaine (2003) further investigate the concept of guardianship and seek to better understand who uses self-protective measures when taking into account various potential predictors including demographics, experiences, daily routines (i.e., eats out frequently,

percentage of time away from home during week), residential and social community structural and contextual variables (i.e., live near nightclub, park, liquor store), fear of crime, substance use and perceptions of safety (i.e., perceives neighborhood to be safe). They found that fear of crime, substance use, and individual demographics had only a small relationship with guardianship, whereas exposure to potential offenders and neighborhood characteristics were the most influential predictors.

Another interesting study conducted during the same year compared the extent and nature of campus crime at similar universities in the United State and England. Fisher and Wilkes (2003) found that rates of victimization on British campuses are *higher* than the rates of victimization for U.S. campuses, and British students were significantly more likely to be repeat victims. The factors which predict victimization on campus in the U.S. are different than that those of the comparable British campuses. For instance, different student lifestyle-routine activity characteristics predict the risk of on campus violent, property, and burglary victimizations.

Finally, recent research explores sexual deviance among male college students within a routine activity framework. Jackson, Gilliland, and Veneziano (2006) found that males with a history of deviant behavior are more likely to be sexually deviant. They also found that other social and environmental factors need to be included in models attempting to explain sexual deviance. Finally, their results support the assumption that prior deviance and sexually aggressive behavior is mediated by individual opportunity.

In short, each study notes the utility of examining campus crime within a routine activity theoretical framework. As such, the paper will now turn to how the theory can be further applied to the campus environment for those interested in examining campus crime and security.

Application of Theory to Campus Environment

It must be underscored that each college and university is unique. As such, there is no "one-size-fits-all" solution or panacea. The make-up of campuses and those frequenting them will vary extensively from campus to campus. However, each institution can benefit from identifying and assessing the spectrum of suitable targets, guardianship elements and potential for motivated offenders on their campus. Specifically, institutions will want to learn how to identify and protect suitable targets, strengthen guardianship and minimize offenders across the campus environment.

Suitable Targets and Proximity/Exposure to Crime

Each campus possesses targets suitable for victimization. Targets can include both individuals and property that are defined as attractive by potential offenders. Certain targets possess symbolic or economic value to would-be offenders and/or may be attractive due to ease of access or low risk of being caught (Cohen & Felson, 1979; Miethe & Meier, 1994). Suitable targets include the students, faculty, staff and visitors, as well as facilities on a campus. There are also a number of factors existing in a campus environment that can increase suitable targets' proximity and exposure to crime, thus, increasing the chances of victimization.

Proximity to crime is maximized when targets and offenders converge in space and time and when people come into routine contact or are in living arrangements with relatively unknown persons (Fisher et al., 1998; Miethe & Meier, 1994). For example, this element can be observed on many campuses where students reside in high-density residence halls. Exposure to crime deals with the involvement in risky or vulnerable types of situations, which increase the risk of victimization. Situations that increase exposure to crime include engaging in public activities at night at venues such as bars, clubs and movie theatres (see Kennedy & Forde, 1990;

Miethe & Meier, 1994) and situations involving alcohol and drugs (see Schwartz & Pitts, 1995; Mustaine & Tewskbury, 1999). Research has suggested that colleges and universities assess, at a minimum, the following elements present on their campuses (Reaves & Goldberg, 1996; Virginia State Crime Commission, 2006):

- Number of students enrolled;
- Number of students living on campus;
- Number of faculty/staff living on campus;
- Number of students commuting;
- Number of foreign students, faculty, or staff;
- Number of buildings;
- Number of residence halls and apartment/family complexes (capacity);
- Acreage;
- Miles of roads;
- Number of parking lots/decks;
- Presence of college/university hospital;
- Number of recognized and unrecognized fraternities/sororities on and off campus;
- Presence of football or other sporting event stadium (seat capacity);
- Presence of entertainment center;
- Presence of historic/tourist attractions;
- Close proximity to major interstate (less than 3 miles);
- Number and type of research laboratories/facilities;
- Number and type of special events;
- VIP visits and protection; and,

- Business complexes.

It should be acknowledged that the presence of such elements on a campus greatly affects the operations of those responsible for securing a campus. A special event on campus can greatly overwhelm existing campus security resources, including the campus police, campus security department, and/or local law enforcement surrounding the campus. However, by identifying the factors that stress campus security officials, strategies can be developed to lessen or mitigate such stressors. Also, by identifying suitable targets, campus officials can also develop ways to strengthen guardianship over such targets.

Capable Guardianship

Metaphorically speaking, capable guardians can be seen as the "eyes and ears" of campus. Guardianship is the ability of individuals or physical objects to prevent the occurrence of a criminal event by either social/interpersonal or physical means (Miethe & Meier, 1994). In a campus environment, social guardianship can include campus police, campus security, local law enforcement, federal law enforcement, as well as other students, faculty, staff, and administrators. Physical guardianship includes the implementation of situational or target hardening measures such as surveillance, closed-circuit television (CCTV), facility/residence hall alarms and access control, door and window locks, environmental design (CPTED) and various other forms of technology used to monitor the campus environment. The goal is to strengthen the capabilities of each entity in order to reduce the likelihood of a criminal act. By identifying and assessing the potential risks toward suitable targets on campus, appropriate guardianship measures can be developed and implemented.

In addition to the types of guardianship measures described above, examples of strengthening guardianship can be quite diverse, including:

- Improved recruitment and specialized training of campus police and security officers;
- Education regarding campus environment to surrounding municipal police departments, as well as state and federal agencies;
- Effective communication, collaboration, and information-sharing between aforementioned entities, along with campus administrators (day-to-day operations, as well as annual summits among key stakeholders);
- Campus safety and security committees with various representatives to help increase awareness and develop responses to the unique needs of a campus;
- Campus escort services to take individuals to their particular destinations on campus; and,
- Siren systems to communicate a threat to the entire campus community immediately

(See, for example, U.S. Department of Justice, 2005; Virginia State Crime Commission, 2006).

Motivated Offenders

While most of the earlier work of routine activity theory adheres to the original emphasis on events rather than persons and assumes criminal inclination as a given (e.g., Cohen & Felson, 1979), others argue that consideration of offender motivation is appropriate and can be useful for explaining victimization as well (Gottfredson, 1981; Schwartz & Pitts, 1995; Mustaine & Tewksbury, 1999). The motivations of offenders vary tremendously and those seeking to ensure campus security should try their best to consider such diversity in order to identify suitable

targets on campus. Understanding and awareness of various offender motivations can lead to more effective and efficient security responses.

Summary of Current Study's Theoretical Limitations

The current study is limited by the theoretical frameworks relied upon. As evidenced in the discussion above, the literature on routine activity theory *itself* brings forth various limitations, critiques, and inconsistencies. First and foremost, the issue concerning the role of offender motivation is apparent. While most of the earlier work adheres to the original emphasis on events rather than persons and assumes criminal inclination as a given (e.g., Cohen & Felson, 1979; Felson & Cohen, 1980), others argue that consideration of offender motivation is appropriate and can be useful for explaining victimization as well (Gottfredson, 1981; Massey et al., 1989; Mustaine & Tewksbury, 1999; Schwartz & Pitts, 1995).

Second, the issue as to whether the majority of research on routine activity provides a test of the theory or an illustration of its application is a concern. Some go so far as to question whether routine activities should be considered an actual theory (Massey et al., 1989), while others question the strength of the theory. For instance, Tittle (1995) raises concern over the explanatory power of the theory by questioning why some routine activities are relevant to the understanding of criminal events, but not others. He views the theory as more of a statement on victimization. Others cite their concern over the theory's strength when demographic variables account for more explanation than routine activity variables (Massey et al., 1989; Sampson & Wooldredge, 1987).

Third, there is (of course) the on-going cry for more direct measurements of routine activities. The use of proxy measures for target suitability and guardianship, in particular, is heavily criticized in the literature (Massey et al., 1989; Mustaine & Tewksberry, 1998; Sampson &

Wooldrege, 1987). Recommendations for future research also include focusing on developing more direct measures pertaining to subclasses of crime categories (Lynch & Cantor, 1992), domain-specific victimizations (Wooldredrge et al., 1992), place-specific approaches (Sherman et al., 1989), and specific population categories and crimes needing more attention in the literature (Mustaine & Tewksbury, 1999; Schwartz & Pitts, 1995).

Fourth, some research notes concern over the level at which the theory is tested and the type of model that much of the research is relying upon. Eck (1995) fleshes out these weaknesses well. He argues that since routine activity theory is a micro-level explanation, tests will be most powerful at the micro-level. To do otherwise, is to ignore the "internal logic" of the theory. Somewhat related, he notes that most research has analyzed findings with linear models when routine activity theory is clearly nonlinear in nature. In sum, he argues that aggregate data of any type is inappropriate and incapable of testing the routine activity theory (pp. 792-3). On the other hand, the current research argues for an aggregate-level examination and that a useful contribution to the campus domain-specific literature will be made given that all such studies have been conducted at the micro-level (for exception, see Fisher, Sloan, Cullen, & Lu, 1998).

Finally, it should be acknowledged that support for theory integration is mixed. It is not a debate unique to routine activity theory, but rather to the entire field of social sciences. Some criminologists disapprove or argue for extreme caution when attempting to integrate theories (e.g., Gottfredson & Hirschi, 1990; Kornhauser, 1978); whereas, others see integration as a goal worthy of achieving (e.g., Thornberry, 1989; Tittle, 1995).

Conclusion

In sum, the origins of routine activity theory are based in human ecology, with specific application of Hawley's (1950) approach based in the study of community. However, elements such as lifestyle, rational choice, and general opportunity theories are readily apparent in routine activity theory's foundational tenants. Routine activity theory offers an alternative way of looking at crime by focusing on the crime itself, rather than the criminality of the offender. It provides another variation in the opportunity and victimization models relevant to the criminology field. As set forth in the presented literature, the theory has been used to explain crime rate trends, property and personal crimes, victimization at specific locations, in specific domains and in specific populations. It also maintains the capacity to be combined with other theories, potentially providing a deeper understanding of both victims and offenders. In conclusion, it is asserted that the theory is quite flexible in its application to examining various victimization research interests. As such, routine activity theory should continue to productively contribute to criminological research, including campus crime and victimization research at micro-, meso- and macro- levels. Linkages between the presented general theoretical frameworks and specific variables included in the current research are enumerated in Chapter Four.

Chapter 3

Data and Methodology

Introduction

The primary goal of the current research is to provide a macro-level analysis of reported campus crime within a theoretical framework. Specifically, the goal is the development of a model(s) that practitioners and academicians can use in predicting the amount, and more importantly, the *types* of crime that may potentially occur on campuses given certain contextual factors within and surrounding a particular campus. This can allow for the development of crime prevention policies and programs.

The current study uses quantitative research methodology to carry out a cross-sectional research design with two approaches utilized as methods of data collection. Specifically, the research involves a mixed-method approach of data-base building from several existing resources via secondary data analysis and content analysis (manifest) to gather all variables of interest. For consistency, all variables represent data reported during and for the 2004 calendar year (January 1, 2004- December 31, 2004). Further, the research takes into account three different sources of campus crime data: Clery Act statistics, VA IBR statistics and campus crime logs. The data collection techniques are all non-reactive/unobtrusive in nature which lends to few ethical concerns (See Appendix B for Human Subject Regulations Decision Chart).

The chapter includes the following research elements: research questions, data sources for the independent and dependent variables, research design, time dimension, units of analysis and population, measurement of variables, analytical techniques, and limitations of the study.

Research Questions

Research questions that will be addressed at the descriptive, bivariate and multi-variate levels include the following:

Descriptive

- What are the contextual/demographic factors of Virginia colleges and universities with campus police and security departments?
- What is the amount of campus crime reported for the 2004 calendar year for these institutions from various data sources (Clery Act statistics, VA IBR statistics, campus crime logs)? What types of crime are most and least reported to campus police and security departments?

Bivariate

- Which factors existing on campus are significantly correlated with one another?
- In particular, which factors are significantly correlated with:
    - Total amount of crime reported;
    - Total amount of violent/personal crime reported; and,
    - Total amount of property crime reported.
- Does the significance of bivariate correlation change based upon the source of data?

Multivariate

- Given various combinations of independent variables, what is the percentage of variance explained given: the source of data and general categories of crime? [Multiple Regression]

By addressing the aforementioned research questions, the development of a model(s) that practitioners and academicians can use in predicting the amount, and more importantly, the *types* of crime that may potentially occur on campuses given certain internal and external factors existing on a particular campus, as well as the existing design/operations of the campus police or security department can be achieved.

Independent and Control Variable Data Sources

In order to collect predictor (and potential control) variables for this study, content analysis (manifest) and secondary data analysis will be conducted. The independent variables for this study are gathered primarily from two sources. First, Fall 2004 data was collected from the State Council of Higher Education in Virginia's (SCHEV) research website. Second, most other variables were extracted from a secondary dataset containing results of a self-administered campus safety survey collected by the Virginia State Crime Commission in 2005, which will be discussed in detail below. A few additional variables were collected from a handful of other sources.

State Council of Higher Education for Virginia (SCHEV) Statistics

Content analysis was performed to extract relevant variables from the SCHEV query database, which is available online. All variables collected represent fall 2004 figures for consistency in the overall methodology of this study. Data collected include information such as enrollment statistics (headcounts), total number living on campus, percentage of student body that is international, male, minority, enrolled full-time, and under 24 years of age, for instance.

Virginia State Crime Commission Campus Safety Survey

Secondary data analysis was performed to extract and analyze variables reported on a survey disseminated in 2005 by the Virginia State Crime Commission (herein, "Crime

Commission"). The current research is using a portion of the variables collected by this study. It is important to understand how this data was collected in order to determine the strengths and weaknesses that will be carried over to the current study. In 2004, a non-partisan young voters organization (Virginia 21), voiced concerns regarding safety at Virginia's higher education institutions. In response to these concerns, the General Assembly of Virginia adopted House Joint Resolution 122 (HJR 122, See Appendix C for copy of resolution), directing the Crime Commission to study campus safety across the Commonwealth of Virginia. The efforts of this study culminated in a list of legislative recommendations and best practices.

All 69 campus police and security departments at 4-year public, 4-year private and 2-year public institutions in Virginia were surveyed (See Appendix D for list of colleges and universities included in original VSCC study). The survey instrument was created by Crime Commission staff with assistance from Virginia Campus Law Enforcement Administrators (VACLEA). In developing the survey, many questions were compiled from several existing questionnaires on campus safety, including the 1995 and 2005 Bureau of Justice Statistics' Survey of Campus Law Enforcement Agencies (Reaves & Goldberg, 1996; 2006) and Virginia House Document 36 (1994). The purpose of the survey was to yield a comprehensive understanding of each campus' profile, budget, personnel/training, operations, equipment, and resource needs. The survey contained 127 primary questions that consisted of various close-ended, open-ended, contingency, and matrix questions. The campus security department surveys were nearly identical to the police department surveys in that only minor changes were made to reflect the context of a security versus a police department. For instance, some questions were removed if they were clearly inapplicable to campus security department operations (See Appendices E and F for copies of both surveys).

Surveys were administered to all campus police and security departments via mail. All 69 college and university safety departments responded; however, a few institutions, namely those with security departments, left some survey sections incomplete.

Other Sources

Additional variables were collected from a few other sources. Variables measuring the demographics of the surrounding community were gathered including: percentage unemployed (Bureau of Labor Statistics), percentage of all ages in poverty (U.S. Census Bureau), and per capita personal income (U.S. Department of Commerce) were gathered. Financial characteristics of institutions, such as campus setting and percentage of student body judged to have financial need, were collected from the Peterson's Guide to Two- and Four- Year Colleges.

Campus Crime Data Sources: Dependent Variables

Three sources of campus crime statistics were used to establish the dependent variables for this study, including the Clery Act statistics, VA IBR statistics (for campus police departments only) and campus crime logs for the 2004 calendar year. Both the Clery Act and VA IBR statistics were collected via content analysis; whereas, crime log records were collected by either secondary data analysis or content analysis as described below. A brief discussion on each data source is included with a description of how the data was collected for the current study.

Clery Act Statistics

Under the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act ("Clery Act") and the Code of Federal Regulations (CFR, Title 34), each institution of higher education in the United States that is eligible for Title IV funding must produce and distribute an annual report containing crime statistics for the previous three years and statements of security policy. Failure to comply with the Act may result in a $27,500 penalty per violation

and other sanctions including possible reduction in or loss of federal grants and contracts. Since 2000, these statistics have been compiled by the U.S. Department of Education. Congress authorized the Act as a means to help potential college students and their parents research criminal offenses on college campuses. Specifically, these institutions must disclose the number of reported murders, forcible and non-forcible sex offenses, robbery, aggravated assaults, burglaries, motor vehicle thefts, arsons, negligent manslaughters, and hate crimes. These crimes are categorized into the following classifications: on-campus; residence halls (subset of on-campus); non-campus; and public property. The reported crimes are also categorized by the hierarchy rule, which counts only the most serious offense in an incident. Finally, statistics on arrests and campus disciplinary action referrals for liquor, drug, and weapon law violations must be provided. There are several significant limitations of Clery Act statistics, as discussed in Chapter One.

Clery Act statistics for the 2004 calendar year were gathered via content analysis (manifest) for all 69 colleges and universities from the Office of Post Secondary Education campus security statistics website (http://www.ope.ed.gov/security). Data for each institution was entered into Excel and transferred to SPSS for analysis. From this data, the study can report the amount of crime reported by institutions to the Department of Education. It is anticipated that the amount of crime reported by this data source will be significantly lower than the total crime reported from either the Uniform Crime Report (if applicable) and campus crime logs due to the limited categorical requirements of the Clery Act (i.e., larceny and vandalism excluded).

VA IBR Statistics

As discussed in the literature review, a number of researchers have relied upon UCR data for measuring campus crime (e.g., Bromley, 1992; Fox & Hellman, 1985; McPheters, 1978;

Volkwein et al. 1995). UCR/NIBRS data are available for most campuses with police departments and for the surrounding localities around campuses. The Federal Bureau of Investigation (FBI) created the UCR program, which established a system of collecting, compiling, and analyzing crime statistics from participating law enforcement agencies throughout the nation. Until somewhat recently, the FBI reported crime data in eight categories including murder, rape, robbery, aggravated assault, burglary, larceny, motor vehicle theft, and arson with less serious crimes categorized as Part II crimes. These offenses were chosen for a number of reasons including the fact that such crimes: 1) are most likely to be reported to police, 2) are readily established as occurring with police investigation, 3) occur in all areas of the U.S., 4) occur with sufficient frequency to make meaningful comparisons across jurisdictions; and, 5) are serious by nature and/or volume (see O'Brien, 1985). While the eight Part I index crimes are still collected and maintained for historical comparison purposes, a new system of data collected has been adopted. The FBI decided to move from the UCR Summary system to the National Incident-Based Reporting System (NIBRS). This change provoked two substantial methodological changes. These two changes are an incident-based event system rather than hierarchical coding and the expansion of crime categories to include crimes against persons, crimes against property, and crimes against society (e.g., drug offenses, gambling, prostitution). The crime category changes also resulted in some definitional differences such as the current inclusion of male rapes in the counts for forcible sex offenses for NIBRS.

There are also several key differences between how crime statistics are reported under the UCR/NIBRS programs and the Clery Act. First, the UCR is a voluntary program where each law enforcement agency submits monthly reports of crimes and arrests. Although voluntary in nature, it is important to acknowledge that over 95% of the U.S. population is covered by this data

source. Unlike the Clery Act statistics, which include reports from both law enforcement and non-law enforcement entities, UCR and NIBRS include only reports from law enforcement personnel. Second, NIBRS calculates crimes in an incident driven fashion that is distinct from Clery Act report data. NIBRS counts every offense within each incident; whereas, Clery Act statistics only include the most serious offense in each incident (parallel to the UCR Summary system). For example, if someone was robbed and raped, NIBRS would count both offenses in the incident, whereas the Clery Act statistics would only count the rape because it is considered the more serious offense in the incident.

Since NIBRS counts all offenses occurring during an incident, some have raised concerns that the amount of reported crime would increase exponentially; however, when crime rates were calculated from NIBRS and Summary UCR data, the average difference between estimates was small. Specifically, on average, the NIBRS Index crime rate was 2% higher; the violent crime rate was higher by less than 1% and the property crime rate was higher by slightly more than 2% (Rantala, 2000).

VA IBR statistics for the 2004 calendar year were collected for all campus police departments from the Virginia State Police's *Crime in Virginia* publication. In 2004 there were a total of 29 campus police departments in Virginia; however, only 21 of those departments had the technological capability to upload figures to the State Police in that calendar year (n= 21). In Virginia, localities send all official UCR and NIBRS data to the Virginia State Police, which acts as a central repository before sending the information to the Federal Bureau of Investigation. For purposes of this research, violent/personal crimes include murder, non-negligent manslaughter, kidnapping/abduction, forcible rape, other forcible sex offenses, robbery, aggravated assault, and simple assault/intimidation. Property offenses include arson, extortion/blackmail, burglary,

larceny, motor vehicle theft, counterfeiting/forgery, fraud, embezzlement, stolen property, and destruction/damage/vandalism. Total incidents reported include all of the aforementioned as well as drug/narcotic offenses, non-forcible sex offenses, pornography, gambling, prostitution, bribery, and weapon law violations. These particular crimes mentioned above account for Group "A" IBR offenses. Group "A" offenses are designated as the most serious offenses and are comprised of 22 categories of crime involving 46 different offenses where Group "B" IBR offenses are less serious and consist of 13 crimes where only arrest data is required. Data was entered into an Excel database and later transferred to SPSS for analysis.

Campus Crime Logs

According to the Code of Federal Regulation (CFR), Title 34, §668.46, every college or university that has a campus police or security department must maintain a daily crime log. This is an additional provision mandated by the Clery Act. Campus police and security departments must record all reported crimes, even those not required to be reported in the annual Clery Act report, including crimes reported within any extended patrol jurisdiction (i.e., concurrent jurisdiction or mutual aid agreements) of the campus police or security department. The log entries must contain the nature of the crime, date, time, general location of each crime and the disposition of the complaint, if known. The most recent 60-day period of the log must be open to public inspection during normal business hours. Any records older than 60 days must be made available within two working days of the inspection request. Institutions are required to update the disposition of a crime log entry up to 60 days after the report is logged. These logs must be kept available for seven years. Authorities may only withhold information if it is prohibited by law, jeopardizes an on-going criminal investigation or safety of an individual, causes a suspect to flee or evade detection, results in destruction of evidence, or breaches a victim's confidentiality

(U.S. Department of Education, 2005). It may be required by state law for colleges and universities to disclose additional information above and beyond what the Act requires such as names of those accused or arrested, complainants names and addresses, or name of responding officer.

In order to collect crime log data for the full 2004 calendar year, two approaches were needed: secondary data collection and content analysis. Essentially, the first six months (January 1, 2004- June 30, 2004) of 2004 campus crime crime logs were extracted from the existing Crime Commission database; whereas, the latter six months (July 1, 2004- December 31, 2004) were requested from all 69 institutions by the current researcher.

Original Study- Collection of Crime Logs

As part of the Crime Commission's study described earlier, campus crime logs were requested from all 69 institutions. However, the request for crime logs was based upon a two-year fiscal time frame (July 1, 2002- June 30, 2004) rather than two *calendar* years, which has methodological implications for the current study as described in the next section. In the Crime Commission study, all 29 campus police departments complied with the request and 80 percent (32 of 40) of security departments responded. This resulted in over 30,000 records from both types of departments. After "non-relevant" entries, such as building checks and lock-ups were removed, the number of crime log records was reduced to approximately 21,400 police department records and 2,800 security department records for the two fiscal years. The Crime Commission argued that this reduction was "appropriate in order to obtain the most accurate picture of reported campus crime and safety incidents" (Virginia State Crime Commission, 2006, p. 17).

Once the crime log information was collected, Crime Commission staff determined aggregate crime categories that could be analyzed to provide meaningful findings. The logs were received in various formats, from electronic to hand-written. Thus, the data was either electronically manipulated or inputted by staff for analysis. The categories analyzed included the date reported, case/incident number, time reported, type of offense, location name and address, disposition status, personal injury suffered, type of injury and type/amount of property damaged or stolen. It is important to recognize that not every crime log included each of these categories. Two particular categories were further coded for uniformity among all institutional crime logs. This was primarily done to insure that future comparisons could be made with the Uniform Crime Reports for campus police departments and that an "apple-to-apple" comparison could be made across both types of safety departments. Thus, crimes were categorized according to the NIBRS Group A and B offenses for all police and security departments (as detailed earlier).

Current Study- Collection of Crime Logs

To reiterate, the first six months of the 2004 calendar year were extracted from the existing Crime Commission database. In order to address any temporal concerns between when the original survey (discussed earlier) was administered and the time period of crimes reported are examined, a new request was sent to all 69 institutions in April 2008 to obtain crime log information for the latter six months of the 2004 calendar year (July 1, 2004- December 31, 2004) or for all 12 months if the college/university did not submit logs in the Crime Commission study. A letter was sent to all colleges and universities listed in the original study (N=69) requesting the information (See Appendix G for initial letter request). Of the 69 institutions, 55 departments complied with the request by submitting "usable" campus crime logs, boasting an 80% response rate. The other 14 institutions are accounted as follows:

- One institution did provide logs but represented scattered months across three different campuses and was therefore not included (56);
- Four institutions were not able to retrieve the data (60);
- Six institutions only had 6-months of data available since they responded to the original Crime Commission request but not the current study's requests (66); and,
- Three institutions did not respond to either the original Crime Commission request or the current study's request (69).

The crime logs were coded according to the methodology employed in the original research as described above. By doing this, there is a consistent calendar year for all dependent variables examined and any temporal disparity concerns between the time frame the survey and campus crime log information encompass are resolved.

Figure 3: Comparison of Campus Crime Data Sources

Source of Data	Who Maintains	Available for:	Crimes Included:	Limitations:
Clery Act statistics	U.S. Department of Education	All Title IV Higher Education Institutions	Criminal homicide including negligent and non-negligent manslaughter, forcible and non-forcible sex offenses, robbery, aggravated assaults, burglaries, motor vehicle thefts, arsons, and hate crimes. Also, arrests and referrals for weapon, liquor, and drug law violations.	Excludes larceny, vandalism, and other crimes Includes crimes reported by non-law enforcement personnel
VA IBR Statistics	Virginia State Police (FBI for other states) Note: Reported crimes maintained by surrounding local law enforcement for campuses with security departments or no official safety department.	Campus Police Departments Only	Group A offenses and Group B arrests. Group A offenses include: murder, non-negligent murder, kidnapping/abduction, forcible rapes, other forcible sex offenses, robbery, aggravated assault, simple assault/intimidation, arson, extortion/blackmail, burglary, larceny, motor vehicle theft, counterfeiting/forgery, fraud, embezzlement, stolen property, destruction/damage/vandalism, drug/narcotic offenses, non-forcible sex offenses, pornography, gambling, prostitution, bribery, and weapons law violations. Group B offenses include: bad checks, curfew/loitering/vagrancy, disorderly conduct, D.U.I., drunkenness, non-forcible family offenses, liquor law violations, peeping tom, runaway, trespass of real property, conspiracy, and all other offenses except traffic. Only arrests are maintained for Group B offenses.	Excludes all campus security departments and campus police departments without technological capabilities to report to the Virginia State Police (FBI)
Campus Crime Logs	Individual Campus Police and Security Departments	Campuses that maintain a campus police or security department	Varies. Can potentially include any of the Group A or B offenses listed above, as well as, other incidents such as traffic/parking violations, OSHA incidents, accidents, etc.	Can be difficult to readily obtain and code uniformly for analysis due to departmental differences in reporting and recording of information.

Research Design

The current research will require a cross-sectional design since the dependent variable, campus crime, is being measured at one point in time. In other words, a one-year time dimension or "snapshot" is being taken of reported campus crime for the 2004 calendar year at colleges and universities across the Commonwealth of Virginia. This particular design is simple, cost-efficient, and appropriate for research seeking only to determine if a correlation exists among variables. One limitation is that this design cannot capture social processes or change over time since we are only capturing information pertaining to one point in time.

Units of Analysis and Population

Evaluation of factors at universities and colleges requires the units of analysis to be at the organizational level. The entire population of Virginia 4-year public, 4-year private, and 2-year public colleges and universities in the Commonwealth of Virginia with campus police and security departments will be included. Likewise, these institutions represent the current study's target population. Data is readily available for all colleges and universities by either content analysis (manifest) or secondary data analysis from an existing database that the researcher was given permission to utilize. It is imperative to underscore that the institutions selected represent a population rather than a sample. By including all institutions, this study does not require any sampling procedures. This distinction will have implications when reporting findings. For example, in this study, sample statistics are not applicable and do not hold "meaning" since the population is being examined. Findings will reflect the social reality so neither confidence levels, probability, or error are relied upon nor is the rejection of null hypotheses required. Instead, it is the extent, direction, and magnitude that each independent variable contributes to variation in the dependent variable(s) that is emphasized. As such, it is acknowledged that the generalizability of

the current study is very limited: only Virginia colleges and universities during the 2004 calendar year time frame. It is underscored that the contributions set forth by this research are in its *methodology* and *models*, rather than transferable findings.

Measurement of Variables

Overview

The purpose of this section is to describe in greater detail the specific measurements of variables considered for inclusion in the current study.

Dependent Variables

After collecting variables of interest via content analysis (manifest) and secondary data analysis, the following variables representing the 2004 calendar year will be included for analysis in the current study for each of the three data sources: Total offenses reported, total amount of violent/personal offenses reported and total amount of property offenses reported. The conceptualization and operationalization of each is provided in Table 1 below.

Independent Variables

Inclusion of the delineated variables is based upon reliable theory and literature. With manifest content analysis and secondary data analysis, the following independent variables will be either collected from SCHEV (Fall 2004 figures), extracted from the Crime Commission's Campus Safety survey or from other sources (Bureau of Labor Statistics, U.S. Census, Peterson's Guide). All ratio/highly interval variables are delineated in Table 1 and binary/categorical independent variables listed in Table 2.

Table 1: Conceptualization and Operationalization of Ratio/ Highly Interval Variables

Variable	Conceptualization	Operationalization
Dependent Variables		
Total Offenses Reported		
Clery Act offenses p/100 students	Total reported murder, forcible and non-forcible sex offenses, robbery, aggravated assaults, burglary, motor vehicle theft, arson.	Ratio, as a #
VA IBR offenses p/100 students	Total VA IBR Group A reported offenses	Ratio, as a #
Campus crime logs p/100 students	Total VA IBR Group A reported offenses	Ratio, as a #
Total Violent/Personal Offenses		
Clery Act offenses p/100 students	Murder, forcible and non-forcible sex offenses, robbery, aggravated assaults	Ratio, as a #
VA IBR offenses p/100 students	Murder, non-negligent manslaughter, kidnapping/abduction, forcible rape, other forcible sex offenses, robbery, aggravated assault, simple assault/intimidation	Ratio, as a #
Campus crime logs p/100 students	Same as VA IBR violent offenses	Ratio, as a #
Total Property Offenses		
Clery Act offenses p/100 students	Total reported burglary, motor vehicle theft, arson.	Ratio, as a #
VA IBR offenses p/100 students	Total reported arson, extortion/blackmail, burglary, larceny, motor vehicle theft, counterfeiting/forgery, fraud, embezzlement, stolen property, and destruction/damage/vandalism.	Ratio, as a #
Campus crime logs p/100 students	Same as VA IBR property offenses	Ratio, as a #

Table 1: Conceptualization and Operationalization of Ratio/ Highly Interval Variables (continued)

Variable	Conceptualization	Operationalization
Institutional Demographics		
Total Number of Students (headcount)	SCHEV Fall 2004 headcount	Used to create rate p/100 students
Percentage Living on Campus	SCHEV Fall 2004 headcount	Ratio, as a %
Percentage Male Students	SCHEV Fall 2004 headcount	Highly Interval, as a %
Percentage Full-time Students	SCHEV Fall 2004 headcount	Highly Interval, as a %
Percentage Under 24 Years Old	SCHEV Fall 2004 headcount	Highly Interval, as a %
Percentage Minority (Black)	SCHEV Fall 2004 headcount	Highly Interval, as a %
Total Number of Alcohol-Related Offenses Reported p/100 students	Campus Crime Logs, 2004	Ratio, as a #
Surrounding Campus		
Unemployment Rate	Bureau of Labor Statistics, 2004	Ratio, as a #
Percentage of All Ages in Poverty	U.S. Census Bureau, 2004	Ratio, as a %
Per Capita Personal Income	U.S. Department of Commerce, 2004	Ratio, in dollars
Surrounding Population	Weldon Cooper, 2004 estimates	Used to create rate p/100
Surrounding Total Offenses Reported p/100 residents	Virginia State Police, Crime in VA	Ratio, as a #
Surrounding Total Violent Offenses p/100 residents	Virginia State Police, Crime in VA	Ratio, as a #
Surrounding Total Property Offenses p/100 residents	Virginia State Police, Crime in VA	Ratio, as a #

Table 1: Conceptualization and Operationalization of Ratio/ Highly Interval Variables (continued)

Variable	Conceptualization	Operationalization
Physical Structure of Main Campus		
Total Number of Buildings	VSCC Survey, reported Fall 2004 figures	Highly Interval, as a #
Total Number of Buildings w/Electronic Surveillance	VSCC Survey, reported Fall 2004 figures	Highly Interval, as a #
Total Number of Residence Halls	VSCC Survey, reported Fall 2004 figures	Ratio, as a #
Total Land Area (acres)	VSCC Survey, reported Fall 2004 figures	Highly Interval, as a #
Total Miles of Roads	VSCC Survey, reported Fall 2004 figures	Highly Interval, as a #
Total Number of Parking Decks	VSCC Survey, reported Fall 2004 figures	Ratio, as a #
Police/Security Department Funding and Personnel		
Percent of Institution Budget Allocated to Safety Department	VSCC Survey, reported Fall 2004 figures	Ratio, as a %
Total Safety Department Expenditures (Gross salaries and wages)	VSCC Survey, reported Fall 2004 figures	Ratio, as a %
Total Number of Police and Security Officers	VSCC Survey, reported Fall 2004 figures	Highly Interval, as a #

Table 2: Conceptualization and Operationalization of Binary/Categorical Variables

Variable	Conceptualization	Operationalization
Ecological Factors		
Proximity to Major Interstate (Less than 3 miles)	VSCC Survey, self-report	0=no 1=yes
Campus Setting	Peterson's Guide	1= Rural 2= Small town 3= Suburban 4= Urban
Campus Transit/Bus System	VSCC Survey, self-report	0= no 1= yes
Institution's Structural, Organizational and Recreational Features		
Type of Institution	VSCC Survey	1=Public 4- year 2=Private 4-year 3=Public 2-year
Presence of Social Fraternity	VSCC Survey, self-report	0=no 1=yes
Presence of Social Sorority	VSCC Survey, self-report	0=no 1=yes
Football Stadium	VSCC Survey, self-report	0=no 1=yes
Basketball Arena	VSCC Survey, self-report	0=no 1=yes
Multipurpose Arts/Entertainment Center	VSCC Survey, self-report	0=no 1=yes
Historic/Tourist Attractions	VSCC Survey, self-report	0=no 1=yes
Hospital	VSCC Survey, self-report	0=no 1=yes
Research Laboratories	VSCC Survey, self-report	0=no 1=yes

Campus Security Programming

Campus Escort Service	VSCC Survey, self-report	0=no 1=yes
Emergency Phones on Campus	VSCC Survey, self-report	0=no 1=yes
Ability to Report Crimes Online	VSCC Survey, self-report	0=no 1=yes
Concurrent Jurisdiction (Police Department only)	VSCC Survey, self-report	0=no 1=yes
Accredited at State or National Level (Police Department only)	VSCC Survey, self-report	0=no 1=yes

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Note on Interpreting Raw Numbers versus Rates

Researchers and practitioners need to undertake extreme caution when interpreting the findings from any campus crime data or research. Griffaton (1993) aptly notes how campus statistics are a "double-edged sword", where, for instance, increases in numbers may be due to increases in actual crime, increased enforcement, increased reporting by students, or any combination thereof. For instance, a major issue for all sources of official campus crime statistics is that the differences in recording and patrol practices may affect any potential relative comparisons (Byrne & Sampson, 1986).

Difficulties in interpreting campus crime numbers are magnified when dealing exclusively with raw numbers. Specifically, numerous experts on campus safety have cautioned against the ability of making accurate comparisons between or rankings among institutions from reported campus crime statistics, especially when making interpretations based upon raw numbers (Bromley, 1995; Nichols, 1997; Seng, 1995; Sloan et al., 1997). Using rates per some population instead of raw numbers is more ideal, even if the population may be underestimated when only using student enrollment numbers.

Other researchers have suggested comparing a campus' crime rate data to the surrounding community so a number of aims can be achieved, such as determining the relative safeness of a campus, better understanding the relationship between campus and community crime, evaluating the level of risk of victimization within a given geographic area, and cautioning students of off-campus threats (Bromley 1992; 1995; Griffaton, 1993; Moriarty & Pelfrey, 1996; Volkwein et al., 1995). Nevertheless, using rates can still be subject to gross misinterpretation. The audience, whether it is law enforcement, security personnel, campus administrators, or the public, needs to be instructed on how to best interpret campus crime rates by putting them in context. It is especially important for campus policymakers to understand how to best interpret the numbers so that more effective responses and strategies can be tailored to any crime or safety problems their campus might be facing.

Data Analysis

Several steps will be taken to analyze the data. First, all variables will be entered into a SPSS database for analysis. Second, normality issues will be addressed and/or acknowledged. Transformations of variables will not take place until the techniques are determined and initial findings are set forth. It is premature to undertake transformations at this point in time; however, ex post facto transformations may be undertaken if determined necessary or commonsensical. Third, as alluded to above, the study will need to conduct some sort of variable reduction. Since the data do not meet the assumptions required of a formal factor analysis, the researcher will attempt to reduce variables based upon common sense, lack of theoretical support, and/or lack of significance at the bivariate level. Bivariate analysis will help determine which of these variables are suitable for inclusion the eventual mulit-variate model(s). However, even if excluded, variables may still be considered for inclusion if they are supported by previous literature or

based upon sound theory. Once data cleaning and variable reduction have been completed, descriptive, bivariate and multivariate analyses can then be performed.

Descriptive Analysis

Frequencies will be conducted on all variables to describe the population in the current study.

Bivariate Analysis

The purpose of this analysis is to use the application of correlation in the context of eventually building a multivariate model to explain campus crime rates.

Ratio Variables

Bivariate correlations will be conducted for all ratio independent variables with the dependent variables in the context of building a model to explain campus crime rates. Pearson correlations will be used to measure the strength of the linear relationships between the pairs of variables. Scatterplots will be used to determine if any violations of the linear fit assumption exist. Normality for each variable will be examined as well. Although Pearson r is based on the assumption that the two variables are approximately normally distributed, the formula still performs well when this assumption is violated (George & Mallery, 2003).

Binary/Categorical Variables

A separate analysis will be conducted on the nominal/categorical independent variables. In order to determine significance, independent samples t tests will be performed for all dichotomous categorical independent variables and One-Way ANOVA will be performed on "Region" and "Type of Institution" variables, and any other variables which contain more than two categories. In order to determine effect size, Eta^2 is reported. Eta^2 is an appropriate measure of strength between nominal independent variables and interval/ratio dependent variables,

especially when there are a lot of different values in the dependent variables (Tabachnick & Fidell, 2001).

Multivariate Analysis

Multivariate statistical approaches utilized will include multiple regressions to determine percentage variance explained.

Multiple Regression

Tabachnick and Fidell (2001) provide an excellent overview of multiple regression and points of consideration. Multiple regression essentially allows the researcher to assess the relationship between one dependent variable and several independent variables. This technique can be applied to a dataset where the independent variables are correlated with both each other and the dependent variables to varying degrees (Tabachnick & Fidell, 2001, p.111). The end product of regression is an equation that represents the best prediction of a dependent variable from several independent variables. The equation includes variables that are linear in nature. Another important application of this technique is the ability to predict scores for members of a new sample on a dependent variable for which only information on independent variables are available. Once a model is achieved, one should be able to predict the amount of campus crime on a campus given the presence or combination of certain independent variables.

There are some theoretical and practical issues that must be taken into consideration. First, while regression discovers relationships among variables it does not imply that such relationships are causal (Tabachnick & Fidell, 2001). One needs to be careful when deciding which independent variables to include. Ideally, one should include predictor variables that are strongly correlated with the dependent variable only rather than with the other predictor variables. As such, researchers will want to identify the fewest number of independent variables

necessary to predict an outcome. Finally, it must be kept in mind that a regression equation is extremely sensitive to the combination of variables included. There are also several practical issues including the ratio of number of cases to independent variables (cannot have more predictors than cases), absence of outliers, multicollinearity, singularity, normality, linearity, homeoscedasticity of residuals, independence of errors and outliers in the solution that must be taken into account (Tabachnick & Fidell, 2001).

Finally, it must be determined which type(s) of multiple regression will be carried out. There are essentially three types of multiple regression including standard, sequential (hierarchical) and statistical (stepwise) (Tabachnick & Fidell, 2001). Standard regression involves all predictor values entering the regression equation at once with each being assessed as if entering the equation after all other predictors. Sequential regression is where predictors are entered into the equation in the order entered by the researcher. Statistical regression is when the order of predictor entry is based only upon statistical criteria rather than theory. Standard regression will be utilized in the current study.

Conclusion

This chapter provides the methodology of the current study. The next chapter will discuss data cleaning, variable reduction, descriptive analyses, bivariate analyses and multivariate analyses. Results will be discussed within the specific theoretical frameworks described in Chapter Two.

Chapter 4

Analysis and Results

Overview

The purpose of this chapter is to provide a discussion of the preparation of the dataset for the current study and the findings stemming from the analysis of the data. First, the chapter will discuss data cleaning measures taken and the removal of a case from the dataset. Second, the chapter will provide descriptive statistics on each of the variables and how certain variables are normalized (i.e., rates created) for analysis. Specifically, descriptive statistics for dependent variables will be outlined followed by independent variables separated into ratio/highly interval and binary/categorical levels. The argument is then made to distinguish institutions with campus police departments from institutions with campus security departments for all subsequent analyses. Third, the chapter will turn to bivariate analyses and decisions made regarding retention or removal of particular variables for further analyses. Finally, multiple regression models are developed and interpreted.

Data Cleaning

Before achieving the final dataset for analysis, a number of data cleaning efforts were undertaken. A brief discussion of these activities is included for each source utilized to create variables for the current research.

SCHEV Database

As discussed earlier, SCHEV statistics are available online. Fall 2004 figures for a number of variables were extracted and entered in SPSS for analysis. Very little data cleaning was necessary. Variables stemming from this process include: total number of students enrolled

(fall 2004 headcount), percentage living on campus, percentage male, percentage full-time, percentage under 21 years of age, and percentage minority.

Virginia State Crime Commission (VSCC) Survey Data

A significant amount of variable reduction was necessary with this particular source as the original dataset had over 600 potential variables. One may recall the lengthy nature of the original surveys (See Appendices E and F), which include many open-ended, contingency, and matrix questions. First, the researcher removed all variables that were irrelevant, which reduced the number of variables to slightly more than 200. Clearly, this was still too many variables for the intended research agenda. From this set of variables, the researcher extracted only those variables arguably related to reported campus crime based on previous literature, theory, and common sense. Those variables were then entered into SPSS for analysis.

Variables stemming from this process include: total number of buildings, buildings with electronic surveillance, number of residence halls, land area (acres), miles of roads, number of parking decks, percentage of college budget allocated to campus safety department, total campus safety department expenditures (gross salaries and wages), total number of campus police officers, total number of campus security officers, proximity to major interstate, type of institution (public 4-year, private 4-year, public 2-year), presence of sorority or fraternity, campus bus/transit system, hospital, football stadium, basketball arena, multi-purpose arts/entertainment center, historic/tourist attractions, research laboratories, safety escort services offered, availability of emergency phones, and availability of a webpage where students can report crimes on-line. Two additional variables were collected only for institutions with campus police departments, including whether or not the department was state or nationally accredited and whether or not the department had concurrent jurisdiction with a local law enforcement

agency (boundaries extended by court order). The researcher also attempted to create three distinct indices measuring special safety programming (i.e., presence of crime prevention education, rape prevention education, alcohol/drug training), Homeland Security/Emergency Preparedness activities (i.e., officer training/awareness, intelligence sharing memorandums of understanding, preparedness exercises), and campus police/security departments' collaboration with other groups/agencies regarding security issues (i.e., faculty/staff organizations, fraternity/sorority groups, neighborhood associations, athletic departments). Unfortunately, there were missing values across many of the institutions for these variables, which did not allow for their inclusion.

Other Sources

A few additional sources were utilized primarily to obtain figures for variables regarding the surrounding campus' city, county, or town. VA IBR figures were obtained from the Virginia State Police's 2004 *Crime in Virginia* publication for each campus' surrounding city, county, or town. Figures for each campus' surrounding city, county or town population were collected from Weldon Cooper's 2004 provisional estimates. Rates of unemployment for the campus' surrounding locality were gathered from the Bureau of Labor Statistics' (BLS) Local Area Unemployment Statistics (LAUS). This particular rate is derived from the ratio of unemployed to the civilian labor force (per 100). The civilian labor force is defined by the BLS as all persons in the civilian noninstitutional population classified as either employed or unemployed (www.bls.gov/lau/laufaq.htm). 2004 figures for the percentage of all ages in poverty for each campus' surrounding locality were also gathered from the U.S. Census Bureau at: www.census.gov/cgi-bin/saipe/saipe.cgi. The per capita personal income (in dollars) for each campus' surrounding locality was gathered from the U.S. Department of Commerce at:

www.bea.gov/regional/reis/scb.cfm. All statistics were available online and were transcribed by the researcher into SPSS for analysis. Finally, 2004 Peterson's Guide figures were obtained for campus setting and percentage of student body judged to have financial need.

Clery Act Statistics

As discussed earlier, Clery Act statistics are available online. Statistics for the 2004 calendar year were downloaded into an Excel spreadsheet from: http://ope.ed.gov/security/. One may recall that Clery Act statistics are reported in four general categories including crimes occurring on-campus, in residence halls (subset of on-campus), on public property and on non-campus property. Due to the inevitable differences in how campus police and security departments count/measure crimes reported on public property and non-campus property, only reported "on-campus" criminal offenses are included in the final dataset.

Another issue faced with this particular data source is how to deal with colleges and universities with multiple campuses (i.e., satellite campuses). Typically, an institution will identify one campus as its "main campus." In these cases, statistics for only the main campus were retained. This is important due to the fact that the original Crime Commission survey asked each institution to report figures for its main campus only. Potential variables stemming from this process for multivariate analyses include:

- *Total Clery Act Offenses Reported;*
- *Total Violent/Personal Clery Act Offenses Reported; and,*
- *Total Property Clery Act Offenses Reported.*

VA IBR Statistics

VA IBR figures were obtained from the Virginia State Police's 2004 *Crime in Virginia* publication. Although there were 29 campus police departments in Virginia during 2004, only 21 had the capability to upload figures to the Virginia State Police for inclusion in the 2004 report. Very little data cleaning was necessary with this particular source of reported campus crime. Potential variables stemming from this process for multivariate analyses include:

- *Total VA IBR Offenses Reported;*
- *Total Violent/Personal VA IBR Offenses Reported; and,*
- *Total Property VA IBR Offenses Reported.*

Campus Crime Logs

This particular campus crime data source required the most time and preparation. The starting point was to examine the six months of data that had already been collected by the Crime Commission (January 1- June 30, 2004). Entries that gave no date or year were deleted because there was no way of determining when the offense was reported. The latter six months of data was then merged with the existing dataset to expand the records to be inclusive of the entire 2004 calendar year. Entries involving fire alarms, accidents, or other non-criminal activity were removed from the dataset. Fields obtained for nearly every institution include: reported date of crime, reported time of crime, and nature of incident. The nature of incident field was further coded into IBR classifications so valid comparisons could be made between the campus crime logs and VA IBR statistics (See Appendix H for NIBRS Coding Schema). Initially, the current study had desired to compare outcomes for specific crime categories due to the fact that most previous studies have looked at similar broad categories of victimization which include very heterogeneous events (see, for exception, Lynch & Cantor, 1992). However, validity issues arose

regarding the manner in which certain crimes were recorded in the logs. For instance, one is often unable to distinguish aggravated assaults from simple assaults/intimidation and unable to distinguish forced rapes from other forcible sexual assaults (sodomy, forced fondling, object penetration) in how the offenses are recorded in the logs. As such, for multivariate analyses only the general/broad crime categories are utilized to address validity and reliability concerns.

After the Excel spreadsheet was finalized and cleaned, offenses were tallied into the following categories for inclusion in multivariate analyses:

- *Total Campus Crime Log Offenses Reported;*
- *Total Violent/Personal Campus Crime Log Offenses Reported;*
- *Total Property Campus Crime Log Offenses Reported; and,*
- *Total Alcohol-related Campus Crime Log Offenses Reported* (utilized as potential predictor variable).

Removal of Case

There was only one institution where multiple campuses was an issue. The institution did not identify a "main campus." Further, the figures reported on the original Crime Commission survey were compromised because the department was in a transition from a campus security department to a campus police department. Unfortunately, some of the questions on the original survey were answered as if they were already a campus police department rather than retrospectively reporting figures for when they were still a campus security department. Also, the crime logs that were provided represented various months from various satellite campuses. There were no complete logs for any of their three campuses. Due to these concerns, this particular institution was removed from the data set, giving a final N-size of 68 institutions for all further analyses.

Dependent Variables- Descriptives

Table 3 illustrates the descriptive analyses for each dependent variable. It should be noted that each variable was normalized to a rate per 100 students in order to make appropriate comparisons among the institutions (e.g., Bromley, 1995; Nichols, 1997; Seng, 1997). However, the total number of raw offenses is also reported to help the reader put rates into context.

Table 3: Descriptive Statistics for Dependent Variables

Variable	Range	Mean	SD	N	Aggregate # of Offenses
Dependent Variables					
Total Offenses Reported p/100 Students					
Clery Act statistics	Range: 0-10.5	.57	1.4	68	1,028
VA IBR statistics	Range: .16-8.2	3.0	2.6	21	5,537
Campus crime logs	Range: 0-14.5	2.2	2.8	55	6,456*
Total Violent/Personal Offenses p/100 Students					
Clery Act statistics	Range: 0-9.0	.20	1.1	68	276
VA IBR statistics	Range: 0-.96	.29	.26	21	519
Campus crime logs	Range: 0-1.5	.19	.26	55	606*
Total Property Offenses p/100 Students					
Clery Act statistics	Range: 0-3.4	.38	.71	68	752
VA IBR statistics	Range: .11-6.8	2.5	2.2	21	4,519
Campus crime logs	Range: 0-10.4	1.8	2.2	55	5,286*

* Campus crime logs have 13 missing values (institutions).
N= Number of Institutions with data available for each source.

There are a total of nine potential outcomes in this study. As such, it is anticipated that nine models will be derived from utilizing multivariate analyses if all three campus crime data sources are examined. As illustrated in Table 3, dependent variables include "Total Offenses Reported per 100 Students" (Clery Act statistics, VA IBR statistics and campus crime logs), "Total Violent/Personal Offenses per 100 Students" (Clery Act statistics, VA IBR statistics and campus crime logs) and "Total Property Offenses per 100 Students" (Clery Act statistics, VA IBR statistics and campus crime logs). Initially, the raw numbers were collected for each of these

outcomes. However, as emphasized by previous research (e.g., Bromley, 1995; Nichols, 1997; Seng, 1997) it was necessary to normalize the raw numbers into a rate for each institution. Ideally, the largest population denominator should be chosen (e.g., Reaves and Goldberg, 1996). To achieve this, the researcher initially chose "total number of students, faculty and staff" as the denominator; however, there were several cases (institutions) that did not report the total number of faculty and staff for fall 2004. Given the already small N-size, the researcher did not want to risk losing any additional cases and, thus, only the "total number of students" was used as the denominator. As such, a reported crime rate per 100 students was determined for all 68 institutions for at least one of the three data sources.

The most important finding to take away from Table 3 is the difference between the rates of property crime reported per 100 students. Since the Clery Act statistics do not account for the total number of reported larceny and vandalism offenses, the average and range of property crimes reported per 100 students is much higher for both VA IBR statistics (2.5 mean, .11-6.76 range) and campus crime logs (1.8 mean, 0-10.44) as compared to the Clery Act statistics (.38 mean, 0-3.44 range). This is an important finding as it underscores the limitation in scope of Clery Act statistics. The complimentary nature of the VA IBR statistics and campus crime logs also has implications when deciding on model development in the current study. Interestingly, a large difference in means for violent crime among all three data sources is not appreciated.

At a descriptive level, the study can provide a breakdown of *specific* crime categories for each data source. It must be underscored that each data source is <u>not</u> strictly comparable; rather, the proportion of crimes reported across the three sources should reveal a meaningful illustration of the nature of reported campus crime across the Commonwealth of Virginia. Yet, recall that

due to validity concerns it is necessary to aggregate these specific crime categories to the general/broad categories discussed earlier for bivariate and multivariate analyses.

Figure 4: Comparison of Top 6 Reported Campus Crimes across Data Sources

2004 Clery Act Statistics

Ranking	Type of Offense	Total Number	Percentage
1	Burglary	637	62.0%
2	Forcible Sex Offenses	113	11.0%
3	Aggravated Assaults	83	8.1%
4	Robbery	79	7.7%
5	Arson	62	6.0%
6	Motor Vehicle Theft	53	5.2%
	Total Offenses Reported	1,028	

N= All 68 institutions

2004 VA IBR Statistics (Group "A" Only)

Ranking	Type of Offense	Total Number	Percentage
1	Larceny	2,837	51.2%
2	Vandalism	1,219	22.0%
3	Drug/Narcotic Offenses	427	7.7%
4	Simple Assaults	385	7.0%
5	Burglary	269	4.9%
6	Fraud	82	1.5%
	Total Offenses Reported	5,537	

N= 21 institutions with campus police departments

2004 Campus Crime Logs (Group "A" Only)

Ranking	Type of Offense	Total Number	Percentage
1	Larceny	3,205	49.6%
2	Vandalism	1,603	24.8%
3	Drug/Narcotic Offenses	506	7.8%
4	Assaults	492	7.6%
5	Burglary	244	3.8%
6	Fraud	103	1.6%
	Total Offenses Reported	6,456	

N= 27 institutions with campus police; 28 with campus security only.

As one can see in Figure 4, there were a total of 1,028 Clery Act offenses reported at the 68 institutions included in the current study for the 2004 calendar year. The vast majority of crimes reported were burglaries (62%). Clery Act statistics may be valid for the crimes that it is mandated to collect; however, the numbers are not an accurate breakdown of all campus crime due to the exclusion of larceny and vandalism. As such, it is argued that VA IBR statistics and campus crime logs give a far more accurate portrayal of reported campus crime.

When examining the top six offenses reported at the 21 institutions with campus police departments that had the capability to report to the Virginia State Police in the 2004 calendar year, one can appreciate a significant difference in the *amount and types* of crime reported as compared to the Clery Act statistics. This is due to the inherent differences in requirements for each data source. Once the additional property crimes of larceny and vandalism are included in the total amount of crimes reported on campus, they comprise the overwhelming majority at just over 70%. Although not a perfect measure of campus crime, the VA IBR statistics clearly provide a far more accurate picture of reported campus crime at Virginia's colleges and universities with campus police departments. It should be noted that the crimes illustrated above are Group "A" offenses only and do not include any of the Group "B" offenses which include many alcohol-related violations. These figures will be presented later.

Finally, when examining the total number of offenses reported at the 55 institutions that provided campus crime logs for analysis in the current study, one can see that the logs almost exactly mirror the proportion of crimes reported in the VA IBR statistics. This is an important finding as this suggests campus security departments, with no VA IBR capabilities, have a resource that can provide a far more accurate picture of crime on their campuses as compared to relying solely upon the Clery Act statistics. Once again, the complimentary nature of the VA

IBR statistics and campus crime logs could also have implications when deciding on model development in the current study.

Group "B" Offenses

This study would be remiss to not include an examination of Group "B" offenses as this is where alcohol-related offenses are recorded. Information on Group "B" offenses can be captured in several ways. The VA IBR statistics can provide information on the number of arrests for all Group "B" offenses by college and university police departments. Campus crime logs capture the total number of Group "B" offenses reported by campus police and security departments.

In 2004, campus police departments in Virginia made a grand total of 2,974 arrests for both Group "A" and "B" offenses. Eighty-five percent (2,574 of 2,974) of arrests were for Group "B" offenses. Recall that Group "B" offenses include: bad checks, curfew/loitering/vagrancy, disorderly conduct, driving under the influence, drunkenness, nonforcible family offenses, liquor law violations, peeping tom offenses, runaway, trespass of real property, conspiracy and all other offenses, except traffic. Table 4 illustrates the breakdown of total Group "B" arrests for 2004:

Table 4:
2004 VA IBR Statistics (Group "B" Arrests Only)

Ranking	Type of Offense	Total Number	Percentage
1	Liquor law violations	761	30%
2	Drunkenness	683	27%
3	All Other (except traffic)	463	18%
4	Driving under influence	391	15%
5	Trespassing	160	6%
6	Disorderly Conduct	75	3%
	Total Group "B" Arrests	2,535	

*N=21 campus police departments with capability to report.

As seen in the table, 72% (1,835 of 2,535) of Group "B" offense arrests are alcohol-related. Considering the Group "A" offense with the most arrests for 2004 is 220 drug/narcotic offenses; campus police department resources are clearly more impacted by enforcing alcohol-related offenses, followed by drug/narcotic offenses.

Next, one can examine the total amount of Group "B" offenses reported by looking at campus crime logs. When referring to Table 5, one can see that when considering only Group "A" offenses reported in campus crime logs, there were a total of 6,456 offenses reported; however, when considering Group "B" offenses as illustrated in Table 6, an additional 4,039 offenses are added to that total. These additional offenses affect the true ranking of reported campus crimes in the logs and provide for an even more accurate portrayal of reported campus crimes.

Table 5:
2004 Campus Crime Logs: Group "A" Offenses Only

Ranking	Type of Offense	Total Number	Percentage
1	Larceny	3,205	49.6%
2	Vandalism	1,603	24.8%
3	Drug/Narcotic Offenses	506	7.8%
4	Assaults	492	7.6%
5	Burglary	244	3.8%
6	Fraud	103	1.6%
	Total Offenses Reported	6,456	

*N= 27 institutions with campus police; 28 with campus security only.

Table 6:
2004 Campus Crime Logs: Group "A" and "B" Offenses

Ranking	Type of Offense	Total Number	Percentage
1	Larceny	3,205	30.5%
2	Vandalism	1,603	15.3%
3	Liquor law violations	756	7.2%
4	Drunkenness	661	6.3%
5	Drug/Narcotic Offenses	506	4.8%
6	Assaults	492	4.7%
7	DUI	421	4.0%
8	Trespassing	301	2.9%
	Total Offenses Reported	10,495	

*N= 27 institutions with campus police; 28 with campus security only.

Property offenses still comprise the largest categories of reported campus crime; but, when consideration is given to Group "B" offenses, the proportion of crimes attributed to alcohol and drugs cannot be denied. When combining alcohol and drug/narcotic related offenses, these offenses comprise nearly one quarter (2,344 of 10,495) of all reported campus crime log offenses.

Independent Variables- Descriptives

The purpose of this section is to provide an overview of the descriptive statistics for the independent variables broken into two distinct categories: ratio/highly interval and binary/categorical variables.

Ratio/Highly Interval Variables

Table 7 illustrates the descriptive analyses for each ratio/highly interval independent and potential control variable. After the table is presented each variable is discussed individually.

Table 7: Descriptive Statistics for Ratio/Highly Interval Variables

Variable	Range	Mean	SD	Missing
Institutional Demographics				
Total Number of Students (headcount)	Range: 194-37,392 Median: 2,813	5,709	7,958	0
Percentage Living on Campus	Range: 0-1.0	.291	.298	5
Percentage Male Students	Range: .004-.999	.404	.144	6
Percentage Full-time Students	Range: .208-1.0	.641	.270	6
Percentage Under 24 Years Old	Range: .323-.996	.690	.161	6
Percentage Minority (Black)	Range: .014-.955	.186	.238	6
Total Number of Alcohol-Related Offenses Reported p/100 students	Range: 0-5.27	.598	1.2	13
Surrounding Campus				
Unemployment Rate	Range: 2.4-12.0	4.9	1.7	0
Percentage of All Ages in Poverty	Range: .05-.21	.15	.05	0
Per Capita Personal Income	Range: 18,475-57,547	29,175	7,982	0
Surrounding Population	Range: 1,030-970,811	93,618	1.727E5*	1
Surrounding Total Offenses Reported p/100 Population	Range: 1.55-24.38	8.98	5.2	1
Surrounding Total Violent Offenses p/100 Population	Range: .06-4.61	2.02	1.4	1
Surrounding Total Property Offenses p/100 Population	Range: .42-17.23	5.98	3.4	1
Physical Structure of Main Campus				
Total Number of Buildings	Range: 1-530	50	78	9
Total Number of Buildings w/Electronic Surveillance	Range: 0-116	8	21	10
Total Number of Residence Halls	Range: 0-51	9	12	4
Total Land Area (acres)	Range: 1-282,184 Median: 136	4,821	35,512	9
Total Miles of Roads	Range: 0-17	3.5	3.9	11
Total Number of Parking Decks	Range: 0-8	.4	1.4	2
Police/Security Department Funding and Personnel				
Total Safety Department Expenditures	Range: $7,999-$3,495,232 Median: $324,406	$623,218	$794,206	20
Total Number of Police Officers	Range: 0-70	8.6	14.5	12
Total Number of Security Officers	Range: 0-54	10	12	12
Total Number of Police and Security Officers p/100 students	Range: 0-12.89	.76	1.92	12

N=68 institutions
* 1.727E5= 172722.0

"Total Number of Students" and "Total Number of Students, Faculty and Staff"

The total number of students, faculty and staff on a campus can be indicative of representing a pool of potential victims, offenders, and/or capable guardians as expressed by the routine activity theory. As discussed earlier, it was necessary to use this variable to normalize the dependent variables by creating rates. Unfortunately, the variable that would create the largest denominator ("total students, faculty, and staff") could not be used due to missing values for several of the institutions. Since "total number of students" was used to normalize the dependent variables, it is not included as a separate variable in any of the analyses. However, it is still insightful to note the large variation in the total number of students enrolled at the institutions included in this study's population. The total number ranges from 194 to 37, 392 students enrolled, allotting for a standard deviation of almost 8,000. Clearly, this factor has implications for the type and amount of security measures offered at campuses as well as the amount and types of crime reported.

"Percentage Living on Campus"

The total number of individuals living on campus allots for a more "constant" pool of potential victims, offenders, and capable guardians based in the routine activity framework. This variable is also underscored as one of the most significant factors influencing reported campus crime rates in previous literature (McPheters, 1978; Lewis & Farris, 1997; Volkwein et al., 1995). This variable was extracted from SCHEV statistics and is reported as a percentage for each institution. There is wide variation in this variable with some campuses having no students living on campus and other campuses having all of its student body living on campus. Those institutions with no students living on campus are all 2-year public community colleges.

"Percentage Male Students"

Aggregate ecological perspectives and previous literature (e.g., Fox & Hellman, 1985) suggest the inclusion of this particular variable. This variable was extracted from SCHEV statistics and is reported as a percentage for each institution. There is wide variation in the number of male students enrolled at institutions, with some having nearly no male enrollment (i.e., Randolph College) and others having almost full male enrollment (i.e., Virginia Military Institute). The colleges and universities with extremely low values of one gender typically have histories of being single sex institutions and have only somewhat recently become co-educational.

"Percentage Full-time Students"

This variable was extracted from SCHEV statistics and is reported as a percentage for each institution.

"Percentage Minority"

Aggregate ecological frameworks and previous literature (e.g., Sloan, 1994; Volkwein et al., 1995) suggest the inclusion of this particular variable. Parallel to this and other previous research, minority is defined as "Black/African-American" for purposes of analyses. This variable was extracted from SCHEV statistics and is reported as a percentage for each institution. Again, the range of this variable is large with some colleges having as low as .014% minority enrollment and others having over 95% minority student bodies. There are several historically Black colleges and universities in Virginia including: St. Paul's College, Hampton University, Norfolk State University, Virginia State University, and Virginia Union University.

"Number of Undergraduate Students Judged to Have Financial Aid"

Previous research has suggested that more wealthy institutions and student bodies may allot for more attractive targets to offenders (e.g., Fernandez & Lizotte, 1995; Sloan, 1992; 1994). As such, this variable was extracted from the 2004 Peterson's Guide. It is important to note that there were 31 missing values for this variable.

"Total Number of Alcohol-Related Offenses Reported p/100 Students"

Previous literature clearly underscores the role of alcohol in crime and victimization (e.g., Marcus & Swett, 2003; Siegel & Raymond, 1992; Sloan, 1994). This variable was created by tallying the total number of alcohol-related offenses reported in the crime logs for each institution and creating a rate per 100 students. Although, there were 13 missing cases, bivariate analyses revealed a significant correlation between this variable and all of the outcome variables. Thus, this variable was retained for consideration in the multivariate analyses. The rate of reported alcohol violations ranged from 0 to 5.27 offenses reported p/100 students with an average of 0.6. It should be underscored that the rate reported is perhaps more indicative of the *level of enforcement* on campus. In other words, just because an institution has a low rate of an offenses does not suggest that the institution does not have alcohol-related issues (or any other crime with a low reported rate) with its student population.

"Unemployment Rate"

Aggregate ecological perspectives and previous research (McPheters, 1978; Sampson & Wooldredge, 1987) have highlighted the influence of the surrounding campus community's unemployment rate. This variable was collected from the Bureau of Labor Statistics for the 2004 calendar year for each campus' surrounding city, county or town. The unemployment rate ranged from 2.4 to 12 and averaged 5.0.

"Percentage of All Ages in Poverty"

As suggested by the ecological perspective, this variable was collected from the U.S. Census Bureau for the 2004 calendar year for each campus' surrounding city, county, or town. The percentage of all ages in poverty ranged from 5% to 20% and averaged 15%.

"Per Capita Personal Income"

This variable was collected from the U.S. Department of Commerce for the 2004 calendar year for each campus' surrounding city, county, or town. The per capita personal income for the campus' surrounding locality ranged from $18, 475 to $57, 547 dollars and averaged $29,175. Clearly, campuses are situated in a wide range of areas with varying levels of socioeconomic status.

"Surrounding Population"

2004 estimates for each campus' surrounding city, county, or town population were collected from the Weldon Cooper Center. This variable was not included in the analyses; rather it was used to create rates p/100 population for each campus' surrounding city, county, or town IBR statistics.

"Surrounding Total Offenses Reported"

Although most research has not found an overwhelming amount of support for the spill-over theory of community crime impacting campus crime rates (e.g., Volkwein et al., 1995), others have found support for the theory when examining the influence of certain crimes such as the surrounding robbery and motor vehicle theft rate (Fernandez & Lizotte, 1995). Further, other researchers have suggested the usefulness of comparing campus crime rates to the surrounding community for a number of different reasons as discussed in earlier chapters (Bromley, 1992; 1994, Griffaton, 1993; Moriarty & Pelfrey, 1996; Volkwein et al., 1995).

This variable was created by taking the total number of VA IBR offenses reported and creating a rate p/100 population using the 2004 Weldon Cooper population estimates. It was necessary to normalize this variable similarly to the other total offense rates created for analytical comparison. There was a wide range in the amount of crime reported p/100 in each campus' surrounding locality. Specifically, the amount of crime reported ranged from 1.5 to 24 crimes reported per 100 residents and averaged 9.0.

"Surrounding Violent/Personal Offenses Reported"

This variable was created by taking the total number of VA IBR violent/personal offenses reported and creating a rate p/100 population using the 2004 Weldon Cooper population estimates. It was necessary to normalize this variable similarly to the other violent/personal offense rates created for analytical comparison. The rate of violent crimes reported ranged from less than one to 4.6 per 100 residents and averaged 2.0.

"Surrounding Property Offenses Reported"

This variable was created by taking the total number of VA IBR property offenses reported and creating a rate p/100 population using the 2004 Weldon Cooper population estimates. It was necessary to normalize this variable similarly to the other property offense rates created for analytical comparison. The rate of property crimes reported ranged from less than one to 17 per 100 residents and averaged 6.0.

'Total Number of Buildings," "Total Number of Buildings with Electronic Surveillance," "Total Number of Residence Halls," "Total Miles of Roads," "Total Number of Parking Decks"

Initially, all of the variables listed above were conceptually valid for inclusion in the analysis. However, since the *capacity* for each of these variables was not able to be determined, the meaningfulness of the variables was lessened and, in turn, represents fairly poor proxy variables.

Thus, these variables were removed from consideration for inclusion in all subsequent analyses. It is recommended that future research attempt to collect variables that measure the precise capacity for each of these variables. For instance, the total number of parking spaces in parking decks or the total individual capacity of each residence hall would be far more beneficial variables to include. Unfortunately, creation or retrieval of such variables was unable to be conducted in the current study.

"Percentage of College/University Budget Allocated to Safety Department"

This figure was collected from the VSCC survey; however, it has 22 missing values and will unlikely go beyond bivariate analysis.

"Total Safety Department Expenditures"

This variable has 20 missing values and will unlikely go beyond bivariate analysis.

"Total Number of Police and Security Officers p/100 students"

This variable could be included as a proxy measure of capable guardianship as suggested by the routine activity framework. This variable was normalized by taking the raw number of police and/or security officers and creating a rate per 100 students. It was necessary to normalize this variable similarly to the other rates created for analytical comparison. The rate of police and security officers ranged from less than one per 100 students to almost 13 per 100 students. There are 12 missing values for this variable, which may have implications for inclusion in multivariate analyses.

Binary and Categorical Variables

Table 8 illustrates the descriptive analyses for each binary/categorical independent variable. Counts and percentages are only given for "yes" responses for binary variables. After the table is presented each variable is discussed individually.

Table 8: Descriptive Statistics for Binary/Categorical Variables

Variable	Category	Number (%)	Missing
Ecological Factors			
Proximity to Major Interstate (Less than 3 miles)	0=no 1=yes	42 (63%)	1
Campus Setting	1= Rural 2= Small town 3= Suburban 4= Urban	13 (23%) 19 (33%) 18 (27%) 7 (12%)	11
Campus Transit/Bus System	0= no 1= yes	15 (24%)	6
Institution's Structural, Organizational and Recreational Features			
Type of Institution	1=Public 4-year 2=Private 4-year 3=Public 2-year	15 (22%) 29 (43%) 24 (35%)	0
Presence of Social Fraternity/Sorority	0=no 1=yes	23 (34%)	1
Football Stadium	0=no 1=yes	21 (31%)	1
Basketball Arena	0=no 1=yes	37 (55%)	1
Multipurpose Arts/Entertainment Center	0=no 1=yes	38 (56%)	1
Historic/Tourist Attractions	0=no 1=yes	23 (34%)	1
Hospital	0=no 1=yes	3 (4.5%)	1
Research labs	0=no 1=yes	18 (27%)	1

Table 8: Descriptive Statistics for Binary/Categorical Variables (cont.)

Variable	Category	Number (%)	Missing
Campus Security Programming			
Campus Police or Security Department	0= Campus Security 1= Campus Police	29 (42%)	0
Campus Escort Service	0=no 1=yes	52 (84%)	1
Emergency Phones on Campus	0=no 1=yes	47 (76%)	6
Ability to report crimes online	0=no 1=yes	29 (50%)	10
Accredited at State or National Level (PD only, N=29)	0=no 1=yes	6 (21%)	0
Concurrent Jurisdiction (PD only, N=29)	0=no 1=yes	8 (28%)	0

* N= 68 institutions; valid percentages reported

As seen in the table above, for ecological factors, almost two-thirds of institutions are in close proximity (less than 3 miles) to a major interstate. Campuses were dispersed across a wide-range of campus settings from rural to urban. Only 15 of the institutions had some type of campus transit/bus system in place. When examining the institutions' structural, organizational and recreational features, one can appreciate a diverse makeup. Fifteen of the institutions are 4-year public institutions, 29 are 4-year private institutions and 24 are 2-year public institutions (community colleges). About one-third of the colleges and universities had the presence of a social fraternity/sorority, football stadium, or historic/tourist attractions on their main campus. Over half of the institutions had a basketball arena or multi-purpose arts/entertainment center on their main campus. Eighteen of the institutions reported having research laboratories on their main campus. Finally, three institutions reported having hospitals on their main campus: Virginia Commonwealth University, University of Virginia and Virginia Military Institute. It should be

noted that the first two institutions listed are regional trauma centers. When examining campus security programming, it can be determined that there were 29 institutions with campus police departments and 39 institutions with campus security departments in 2004. Over three-quarters of the colleges and universities offer campus escort services or emergency phones on their main campus. However, only half offer the ability to report campus crimes online. When looking only at institutions with campus police departments, three were accredited at the state-level by the Virginia Law Enforcement Professional Standards Commission (VLEPSC) in 2004, including the College of William and Mary, Old Dominion University and Radford University. Three campus police departments were nationally accredited by the Commission on Accreditation for Law Enforcement Agencies (CALEA) including George Mason University, University of Richmond and Virginia Tech.

Vital Significance of Type of Campus Safety Department

Of all the campus characteristics discussed above, it is most worthwhile to conduct a separate analysis of institutions with campus police departments versus institutions with campus security departments. This notion will be justified in the following pages to help the reader understand why this decision was made. Institutions with campus police departments arguably operate very differently than those without. Far more meaningful findings can be derived by looking at these two types of institutions independently. As such, from this point on, findings will be reported separately for each type of institution. The study, thus, can be seen as looking at two distinct populations: those institutions with campus police departments (N=29) and institutions with security departments (N=39). Table 9 illustrates descriptive statistics for dependent variables separated by type of institutional campus safety department below. Raw number of offenses is also reported to help the reader place the rates into context.

Table 9: Descriptive Statistics for Dependent Variables Split by Type of Safety Department

Variable	Police Department (N=29)*				Security Department (N=39)**			
Dependent Variables	Range	Mean	SD	N (offenses)	Range	Mean	SD	N (offenses)
Total Offenses Reported								
Clery Act statistics	0-2.9	.48	.68	29 (801)	0-10.5	.639	1.8	39 (227)
VA IBR statistics	.16-8.2	3.00	2.6	21 (5,537)	n/a	n/a	n/a	n/a
Campus crime logs	.13-14.5	3.3	3.2	27 (5,930)	0-8.8	1.19	1.9	28 (526)
Total Violent/Personal Offenses								
Clery Act statistics	0-.47	.09	.11	29 (193)	0-9.1	.27	1.4	39 (83)
VA IBR statistics	0-.96	.29	.26	21 (519)	n/a	n/a	n/a	n/a
Campus crime logs	.02-1.5	.31	.29	27 (565)	0-.62	.08	.15	28 (41)
Total Property Offenses								
Clery Act statistics	0-2.5	.39	.61	29 (608)	0-3.4	.36	.78	39 (144)
VA IBR statistics	.11-6.7	2.4	2.1	21 (4,519)	n/a	n/a	n/a	n/a
Campus crime logs	.13-10.4	2.62	2.4	27 (4,848)	0-7.6	.98	1.6	28 (438)

* 2 missing values (institutions) for campus police crime logs
** 11 missing values for campus security crime logs

Similar to the descriptives table looking at all institutions combined (Table 3), the most important finding to take away from the table above is the difference between the rates of property crimes reported per 100 students. Since the Clery Act statistics do not account for the total number of larceny and vandalism offenses, the average and range of property crimes reported per 100 students is much higher for both VA IBR statistics (2.5 mean, .11-6.7 range) and campus crime logs for both types of institutions (2.6 mean, .13 -10.4 range and .98 mean, 0-7.6 range for campus police and security departments, respectively) as compared to the Clery Act statistics (.39 mean, 0-2.5 range and .36 mean, 0-3.4 range for campus police and security departments, respectively). This is an important finding as it once again underscores the limitations of Clery Act statistics for purposes of this research. The complimentary nature of the VA IBR statistics and campus crime logs also has implications when deciding on model development in the current study.

At a descriptive level, the study can also provide a breakdown of *specific* crime categories for each data source by type of safety department. It must be underscored that each data source is <u>not</u> strictly comparable; rather, the proportion of crimes reported across the three sources should reveal a meaningful illustration of the nature of reported campus crime across the Commonwealth of Virginia by type of safety department. When comparing campus police and security departments, one can compare their Clery Act statistics and campus crime logs since VA IBR statistics are only available for the campus police departments (see also Figures 1 and 3). Below, Figure 5 illustrates these comparisons.

Figure 5: Comparison of Top 6 Reported Campus Crimes across Data Sources by Type of Campus Safety Department

2004 Clery Act Statistics:
Institutions with Campus Police Departments

Ranking	Type of Offense	Police Department
1	Burglary	62.5%
2	Forcible Sex Offenses	12.4%
3	Arson	7.1%
4	Aggravated Assaults	6.2%
5	Motor Vehicle Theft	6.2%
6	Robbery	5.4%

* N= 29 institutions with 801 on-campus only Clery offenses reported

2004 Clery Act Statistics:
Institutions with Campus Security Departments

Ranking	Type of Offense	Security Department
1	Burglary	59.9%
2	Robbery	15.9%
3	Aggravated Assaults	14.5%
4	Forcible Sex Offenses	6.2%
5	Arson	2.2%
6	Motor Vehicle Theft	1.3%

* N= 39 institutions with 227 on-campus only Clery offenses reported

2004 Campus Crime Logs: Police vs. Security Departments
(Group "A" Offenses Only)

Ranking	Type of Offense	Police Department (n= 5,930)	Security Department (n=526)
1	Larceny	49.8%	48.3%
2	Vandalism	24.8%	25.1%
3	Drug/Narcotic Offenses	7.8%	8.6%
4	Assaults	7.8%	5.9%
5	Burglary	3.4%	7.8%
6	Fraud	1.7%	1.0% (ranked 7th)

* n= 55 institutions with 6,456 total logs reported.

As one can see in Figure 5, there were a total of 801 Clery Act offenses reported at institutions with campus police departments and 227 offenses reported at institutions with security departments. Clearly, the majority of offenses are reported at institutions with campus police departments. The vast majority of crimes reported at both types of institutions were burglaries comprising around 60% of all crimes reported within the parameters of the Clery Act requirements. Again, these figures do not provide an accurate breakdown of reported campus crime due to the exclusion of larceny and vandalism. Rather, the figures provide the percentage distribution of crime reported for each type of safety department for the categories required by the Clery Act. Campus crime logs give a far more accurate portrayal of reported campus crime at institutions with campus police or security departments.

When examining the top six offenses reported in campus crime logs at institutions with campus police departments versus those with security departments, one can see that the proportion of crime reported for each type are very similar with larcenies accounting for nearly half and vandalism comprising a quarter of all reported offenses. Drug/narcotic offenses account for about eight percent. Proportionally, slightly more assaults were reported at institutions with campus police departments and slightly more burglaries at institutions with campus security departments. These are important findings as this suggests campus security departments, which do not have VA IBR capabilities, have a resource that can provide a far more accurate picture of crime on their campuses as compared to relying solely upon the Clery Act statistics. In other words, the campus crime logs provide a fairly valid proxy for reported campus crime at both types of institutions. This notion will have implications when deciding on model development. Now, the study will report descriptive statistics for the independent variables separated by type of safety department.

Ratio/Highly Interval Variables by Type of Campus Safety Department

Table 10 illustrates the descriptive analyses for each ratio/highly interval independent and potential control variable. After the table is presented each variable is discussed individually.

Table 10: Descriptive Statistics for Ratio/Highly Interval Variables Split by Type of Safety Department

Variable	Police Department (N=29)				Security Department (N=39)			
	Range	Mean	SD	Missing	Range	Mean	SD	Missing
Institutional Demographics								
Total # of Students	936-37,392	9,731	10,211	0	194-22,691	2,718	3,644	0
% Living on Campus	0-1.0	.37	.29	0	0-.837	.22	.29	5
% Male Students	.314-.999	.47	.15	0	.004-.52	.35	.11	6
% Under 24 Years Old	.494-.996	.75	.15	0	.32-.99	.64	.15	6
% Minority (Black)	.014-.939	.21	.29	0	.01-.96	.17	.18	6
Total Number of Alcohol-Related Offenses p/100 students	0-5.3	.94	1.2	2	0-5.2	.26	.98	11
Surrounding Campus								
Unemployment Rate	2.7-7.7	4.8	1.2	0	2.4-12.0	5.1	1.9	0
% of All Ages in Poverty	.05-.2	.15	.04	0	.05-.21	.14	.05	0
Per Capita Personal Income	$18,475-$57,547	$30,128	$9,468	0	$19,783-$57,328	$28,467	$6,713	0
Surrounding Total Offenses p/100 population	1.6-24.3	8.8	5.7	1	1.7-20.1	8.7	4.8	0
Surrounding Total Violent Offenses p/100 population	.06-4.6	2.1	1.3	1	.2-4.6	2.0	1.4	0
Surrounding Total Property Offenses p/100 population	.42-17.2	6.2	3.8	1	1.2-13.9	5.8	3.2	0
Police/Security Department Funding and Personnel								
Total Safety Dept. Expenditures p/100 students	$2,215-28,877	$11,670	$7,131	0	$700-276,804	$26,050	$58,725	18
Total Number of Police and Security Officers p/100 students	.02-.92	.36	.21	1	0-12.9	1.2	2.7	11

The wide variation in the total number of students enrolled, percentage living on campus as well as minorities, males, and students under the age of 24 enrolled is also reflected in the data when separated by type of safety department. However, on average, institutions with campus police departments tend to serve a significantly larger student body. Additionally, campus police and security departments boast relatively similar variation in surrounding campus demographics as reflected in the percentage of all ages in poverty, rate of unemployment, per capita income, and surrounding total, violent and property VA IBR offenses reported per 100 residents. Due to the smaller number of students at many of the institutions with campus security departments, the average number of expenditures and security officers p/100 students appears much higher.

Binary/Categorical Variables by Type of Campus Safety Department

Table 11 illustrates the descriptive analyses for each binary and categorical variable. Counts and percentages are only given for "yes" responses for binary variables. After the table is presented each variable is discussed individually.

Table 11: Descriptive Statistics for Binary/Categorical Variables By Type of Campus Safety Department

Variable	Category	Police Dept. (N=29)	Missing	Security Dept. (N=39)	Missing
Ecological Factors					
Proximity to Major Interstate (Less than 3 miles)	0=no 1=yes	42 (63%)	0	22 (58%)	1
Campus Setting	1= Rural 2= Small town 3= Suburban 4= Urban	3 (12%) 9 (35%) 9 (35%) 5 (19%)	3	10 (32%) 10 (32%) 9 (29%) 2 (7%)	8
Campus Transit/Bus System	0= no 1= yes	9 (32%)	0	6 (17%)	5
Institution's Structural, Organizational and Recreational Features					
Type of Institution	1=Public 4-year 2=Private 4-year 3=Public 2-year	15 (52%) 8 (28%) 6 (21%)	0	0 (0%) 21 (54%) 18 (46%)	0
Presence of Social Fraternity/Sorority	0=no 1=yes	15 (52%)	0	8 (21%)	1
Football Stadium	0=no 1=yes	17 (59%)	0	4 (11%)	1
Basketball Arena	0=no 1=yes	22 (76%)	0	15 (40%)	1
Multipurpose Arts/Entertainment Center	0=no 1=yes	20 (69%)	0	18 (47%)	1
Historic/Tourist Attractions	0=no 1=yes	14 (48%)	0	9 (24%)	1

Table 11: Descriptive Statistics for Binary/Categorical Variables By Type of Campus Safety Department (cont.)

Variable	Category	Police Dept. (N=29)	Missing	Security Dept. (N=39)	Missing
Hospital	0=no 1=yes	3 (10%)	0	0 (0%)	1
Research Laboratories	0=no 1=yes	14 (48%)	0	4 (11%)	1
Campus Security Programming					
Campus Escort Service	0=no 1=yes	26 (90%)	0	26 (79%)	6
Emergency Phones on Campus	0=no 1=yes	26 (93%)	1	21 (62%)	5
Ability to Report crimes Online	0=no 1=yes	18 (64%)	1	11 (37%)	9
Accredited at State or National Level	0=no 1=yes	6 (21%)	0	n/a	n/a
Concurrent Jurisdiction	0=no 1=yes	8 (28%)	0	n/a	n/a

* Figures may not equal 100% due to rounding; valid percentages reported.

As seen in the table above, regarding ecological factors, well over half of both institution types are in close proximity (less than 3 miles) to a major interstate. Both types of institutions were dispersed across a wide-range of campus settings from rural to urban. Less than one-third of both institution types had some type of campus transit/bus system in place. When examining the institutions' structural, organizational, and recreational features, one can appreciate a diverse makeup for both types of institutions. All fifteen 4-year public institutions have campus police departments; 8 with campus police departments and 21 with security departments are 4-year private institutions; and, 6 with campus police departments and 18 with security departments are 2-year public institutions (community colleges). Institutions with campus police departments all reported a higher presence of organizational and recreational features on their main campuses as compared to institutions with security departments. In particular, around half of institutions with campus police departments reported the presence of a social fraternity/sorority, football stadium, historic/tourist attraction, or research laboratories. Over two-thirds reported a multi-purpose arts/entertainment center and almost three-fourths reported a basketball arena. All three hospitals are located at institutions with campus police departments. On the other hand, only four institutions with campus security departments reported having a football stadium or research laboratories. Nearly one-quarter reported the presence of social fraternity/sorority or historic/tourist attraction on their main campus. Finally, only 40 percent of security departments reported having a basketball arena and just under half reported having a multipurpose arts/entertainment center on their main campus. When examining campus security programming, 90 percent of institutions with campus police departments and over three-quarters of those with security departments offered campus escort services. Over 90 percent of institutions with campus police departments and over 60 percent of those with security departments reported having

emergency phones on their main campus and just under two-thirds of police departments and just under 40 percent of security departments afforded the ability to report campus crimes online.

Bivariate Analyses

Differences Between Data Sources

Another important issue to determine in this study is whether or not the amount of crime reported on campuses varies by the campus crime data source. Clearly, descriptive statistics suggest a difference between the three sources. In particular, the disparity between Clery and the other two data sources is apparent. Thus, it may be appropriate to determine which source offers the best proxy measure of reported campus crime for each type of institution after taking into consideration issues such as reliability/validity, missing values and amount of contribution to gaps in the literature. However, before turning to this discussion, bivariate correlations were conducted to determine the *magnitude* of correlation between the data sources and are presented in Table 12:

Table 12: Bivariate Correlations between Data Sources

Variable	Total Clery	Violent Clery	Property Clery	Total IBR	Violent IBR	Property IBR	Total Logs	Violent Logs	Property Logs
Total Clery	1.00	.879**	.677**	.459*	.675**	.442*	.562**	.500**	.579**
Violent Clery	.879**	1.00	.244*	.390	.483*	.408	.704**	.781*	.679**
Property Clery	.677**	.244*	1.00	.390	.673**	.426	.496**	.415**	.518**
Total IBR	.459*	.390	.448*	1.00	.807**	.992**	.892**	.616**	.918**
Violent IBR	.675**	.483*	.673**	.807**	1.00	.753**	.854**	.901**	.819**
Property IBR	.442*	.408	.426	.992**	.753**	1.00	.834**	.533*	.875**
Total Crime Logs	.562**	.704**	.496**	.892**	.854**	.834**	1.00	.907**	.991**
Violent Crime Logs	.500**	.781**	.415**	.616**	.901**	.533*	.907**	1.00	.871**
Property Crime Logs	.579**	.679**	.518**	.918**	.819**	.875**	.991**	.871**	1.00

** Correlation significant at the .01 level (2-tailed)
* Correlation significant at the .05 level (2-tailed)
N= 68 for Clery Act statistics; N= 21 for VA IBR statistics; N= 55 (13 missing) for campus crime logs.

Naturally, it is anticipated that there would be correlation between all three campus crime data sources. However, it is informative to examine the *strength* of the linear relationship between the data sources. The Clery Act statistics have a "moderate" to "marked" degree of correlation with VA IBR statistics and campus crime logs. Yet, one can appreciate a significant increase in the strength of the relationship between VA IBR statistics and campus crime logs, with the majority of correlations being above .80 indicating a "high" correlation between the variables. As discussed earlier, VA IBR statistics give a far more accurate picture of reported campus crime due to the inclusion of many additional crimes as compared to the Clery Act statistics. Yet, the VA IBR statistics are only available for campus police departments. This leaves most campus security departments to rely upon the limited Clery Act statistics. It may be more useful and informative for campus security departments to further utilize their campus crime logs, rather than Clery Act statistics, to gain a more insightful picture of what is occurring on their campus. The "high" degree of correlation between the VA IBR statistics and campus crime logs suggests this action would be useful. Therefore, it is argued that the campus crime logs afford the best proxy measure of reported campus crime for institutions with campus security departments. Now, the researcher must choose the best proxy measure for institutions with campus police departments.

Based on reliability and validity, VA IBR statistics are arguably the best proxy measure for institutions with campus police departments. However, although there are 29 institutions with campus police departments in this study, only 21 had the capability to report to the state police in 2004. These eight institutions with missing values would have to be removed if VA IBR statistics were chosen as the best proxy outcome measure. Missing values are a significant

concern given the already small N-size. When examining the response rate of institutions with campus police departments, 28 of the 29 institutions provided their campus crime logs. This would ameliorate the missing values concern. Further, when considering what would make the largest contribution to the body of campus crime literature, it is argued that campus crime logs should be used to help determine how good a measure they are of reported campus crime. Previous literature has always focused on Clery Act statistics and Uniform Crime Reports/NIBRS outlining all of these data sources' reliability and validity concerns at length; hence, it is argued further that this underscores the importance of examining another source of campus crime data, which has never been utilized before. Thus, when balancing out the concerns of missing values, reliability/validity and contribution to the body of literature, this study will utilize campus crime logs as the best proxy measure for institutions with campus police departments as well. This decision will also help to reduce the number of models, which will help make findings more meaningful to a broader range of audiences.

As a result of these actions, a minimum of three models for each type of institution is anticipated. Specifically, three models for institutions with campus police departments (total, violent/personal and property campus crime log offenses reported per 100 students) and three models for institutions with campus security departments (total, violent/personal and property campus crime log offenses reported per 100 students).

Ratio/Highly Interval Variables- Bivariate (Pearson) Correlations

The purpose of this bivariate analysis is to use the application of correlation in the context of eventually building a model to explain campus crime rates. Bivariate correlations were conducted for all ratio/highly interval independent variables with the dependent variables (total, violent/personal and property campus crime log offenses reported per 100 students). Pearson

correlations were used to measure the strength of the linear relationships between the pairs of variables. Scatterplots were used to determine if any violations of the linear fit assumption existed. Normality for each variable was examined as well. Although Pearson r is based on the assumption that the two variables are approximately normally distributed, the formula still performs well when this assumption is violated (George & Mallery, 2003). Pearson r values range from -1 to +1 with an absolute value above .80 considered a "high correlation," .60-.80 a "marked degree of correlation," .40 -.60 a "moderate degree of correlation," .20-.40 a "low degree of correlation" and below .20 as "no or negligible correlation" (Tabachnick & Fidell, 2001). It is important to underscore that even though a variable may have little or no degree of correlation at this stage, it does not necessarily preclude its inclusion in a future multivariate model if it is strongly supported by theory or preexisting literature for inclusion. Table 13 presents the significant bivariate correlations for all ratio/highly interval independent variables related to institutions with campus police departments. After the table is presented, the variables that will be removed from consideration for multivariate analyses due to missing values and/or lack of significant bivariate correlation will be discussed and justified.

Table 13: Bivariate Correlations for Ratio-Ratio Variables: Campus Police Departments

Variable	Total Logs	Violent Logs	Property Logs
Institutional Demographics			
Percentage Living on Campus	.648**	.652**	.657**
Percentage Male Students	.532**	.645**	.502**
Percentage Under 24 Years Old	.514**	.547**	.506**
Percentage Minority (Black)	.138	.240	.124
Total Number of Alcohol-Related Offenses Reported p/100 students	.867**	.757**	.852**
Surrounding Campus			
Unemployment Rate	.286	.230	.339
Percentage of All Ages in Poverty	.259	.217	.292
Per Capita Personal Income	-.205	-.303	-.181
Surrounding Total Offenses Reported p/100 population (1 missing value)	-.022	-.150	.053
Surrounding Total Violent Offenses p/100 population (1 missing value)	.028	-.022	.072
Surrounding Total Property Offenses p/100 population (1 missing value)	-.041	-.175	.035
Police Department Funding and Personnel			
Total Safety Department Expenditures	.700**	.627**	.733**
Total Number of Police and Security Officers p/100 students (1 missing value)	.767**	.780**	.760**

n= 27 institutions with campus police departments who submitted campus crime logs.
** Correlation significant at the .01 level (2-tailed)
* Correlation significant at the .05 level (2-tailed)

As illustrated in the table above, variables representing institutional demographics (except for precentage minority) and police department personnel all have significant correlations with total, violent, and property crime log offenses reported per 100 students. Institutional demographics have a "moderate" (.40-.60) to "marked" (.60-.80) degree of correlation, whereas most of the police department funding/personnel variables have a "marked" to "high" (.80 and above) degree of correlation with the amount and type of crime reported on campus per 100 students. In contrast, none of the variables representing the surrounding campus' city, county, or town were found to have a significant correlation boasting "low" to "negligible" correlations with the dependent variables. The direction of each significant correlation is positive, suggesting that in a linear relationship an increase of the independent variable is correlated with an increase in the dependent variable or variables.

From this analysis, a number of variables can be removed from consideration for multivariate analyses. First, the "total safety department expenditures" variable is removed due to its high collinearity with "total number of police and security officers per 100 students." This high collinearity makes sense since total expenditures is measured by gross salaries and wages. The total number of officers per 100 students was chosen because it had the stronger correlation with the dependent variables. Second, a number of variables clearly do not have significant correlations with the outcome variables including "percentage minority," and all variables representing the surrounding campus. Thus, the ratio/highly interval variables that will be included in all three multivariate models for campus police departments include percentage living on campus, percentage male students, percentage study body under 24 years of age, total number of alcohol-related offenses reported per 100 students, and the total number of police and

security officers per 100 students. Later, multicollinearity diagnostics among these variables will be conducted before attempting regression.

Table 14 presents the significant bivariate correlations for all ratio/highly interval independent variables related to institutions with campus security departments.

Table 14: Bivariate Correlations for Ratio-Ratio Variables: Campus Security Departments

Variable	Total Logs	Violent Logs	Property Logs	Missing
Institutional Demographics				
Percentage Living on Campus	.833**	.691**	.822**	5
Percentage Male Students	-.035	-.112	-.048	6
Percentage Under 24 Years Old	.694**	.469**	.659**	6
Percentage Minority (Black)	-.390	-.281	-.377	6
Total Number of Alcohol-Related Offenses Reported p/100 students	.794**	.697**	.802**	11
Surrounding Campus				
Unemployment Rate	-.258	-.268	-.237	0
Percentage of All Ages in Poverty	-.321	-.402*	-.286	0
Per Capita Personal Income	.213	.272	.175	0
Surrounding Total Offenses Reported p/100 population	.074	.068	.074	0
Surrounding Total Violent Offenses p/100 population	.129	.131	.134	0
Surrounding Total Property Offenses p/100 population	.069	.058	.068	0
Security Department Funding and Personnel				
Total Safety Department Expenditures	-.052	-.069	-.044	18
Total Number of Security Officers p/100 students	-.118	-.136	-.109	11

n= 28 institutions with campus security departments who submitted campus crime logs.
** Correlation significant at the .01 level (2-tailed)
* Correlation significant at the .05 level (2-tailed)

As seen in the above table, variables representing institutional demographics (except percentage male and minority) contribute to the overwhelming majority of significant correlations with total, violent/personal, and property campus crime log offenses reported per 100 students. These variables have a "moderate" to "high" degree of correlation with the amount and type of crime reported on campus. On the other hand, none of the variables representing the surrounding campus or security department funding/personnel were significant, with the exception of percentage of all ages in poverty correlation with total violent/personal crime log offenses reported per 100 students with a "moderate" degree of correlation. Again, the direction of each significant correlation is positive, suggesting that in a linear relationship an increase of the independent variable is correlated with an increase in the dependent variable or variables.

From this analysis, a number of variables can be removed from consideration for multivariate analyses. A number of variables clearly do not have significant correlations with the outcome variables including "percentage minority," and "percentage male," as well as all variables representing the surrounding campus, with the exception of "percentage all ages in poverty." Thus, the ratio/highly interval variables that will be considered for all three multivariate models for institutions with campus security departments include percentage living on campus, percentage study body under 24 years of age, and total number of alcohol-related offenses reported per 100 students. The surrounding campus' percentage of all ages in poverty will be considered for the violent/personal offenses model only.

Binary Variables- Means and Group Differences with Strength of Association (Eta^2)

A separate analysis is conducted on the binary independent variables. In order to determine significance, independent samples t tests were performed for all binary independent variables. In order to determine effect size, Eta^2 is reported. Eta^2 is an appropriate measure of

strength between nominal independent variables and interval/ratio dependent variables, especially when there are many different values in the dependent variables (Tabachnick & Fidell, 2001). Eta^2 varies from 0 to 1 but unlike other association measures is always a positive number, with values close to zero signifying no association, and values closer to one indicating a high degree of association. Table 15 illustrates the significance and Eta^2 values (in parentheses) for all binary independent variables reported for institutions with campus police departments. After the table is presented, the variables that will be removed from consideration for multivariate analyses will be discussed and justified

Table 15: Means and Groups Differences with Strength of Association (Eta^2) for Nominal-Ratio Variables: Campus Police Departments

Variable	Total Logs	Violent Logs	Property Logs	Missing
Ecological Factors				
Proximity to Major Interstate	.193 (.258)	.170 (.272)	.278 (.217)	0
Campus Transit/Bus System	.362 (.186)	.404 (.171)	.385 (.178)	1
Institution's Structural, Organizational and Recreational Features				
Presence of Social Fraternity/Sorority	.107 (.317)	.159 (.279)	.081 (.342)	0
Football Stadium	.068 (.357)	.036 (.405)*	.074 (.349)	0
Basketball Arena	.025 (.431)*	.050 (.381)*	.019 (.448)*	0
Multipurpose Arts/Entertainment Center	.576 (.112)	.243 (.233)	.653 (.091)	0
Historic/Tourist Attractions	.447 (.153)	.786 (.055)	.341 (.191)	0
Hospital	.803 (.050)	.729 (.070)	.815 (.047)	0
Research Laboratories	.576 (.113)	.301 (.207)	.754 (.063)	0
Campus Security Programming				
Campus Escort Service	.054 (.375)	.000 (.640)*	.096 (.326)	0
Emergency Phones on Campus	.725 (.073)	.590 (.111)	.763 (.062)	1
Ability to Report Crimes Online	.610 (.105)	.392 (.175)	.666 (.089)	1
Accredited at State or National Level	.828 (.044)	.318 (.200)	.971 (.007)	0
Concurrent Jurisdiction	.867 (.034)	.849 (.038)	.900 (.025)	0

* Significant at the .05 level (2-tailed)
n= 27 institutions with campus police departments who submitted campus crime logs.
Note: Independent Samples t Tests were performed for all binary categorical variables.

As indicated in Table 15, none of the variables representing ecological factors was significant in relation to any of the dependent variables. Most of the variables representing institutional structure, organization, and recreation were not significant either, with the exception of the presence of a football stadium or basketball arena on the main campus. Football stadiums on the main campus were found to be significant in relation to the number of violent/personal campus crime log offenses reported per 100 students, whereas the presence of basketball arenas were significant in relation to total and property campus crime log offenses reported per 100 students. The Eta^2 scores all indicate a low to moderate degree of association between the variables. None of the variables representing campus security programming were significant except for the presence of campus escort services, which were significant in relation to the total violent campus crime log offenses reported per 100 students. It should be noted that the presence of social (Greek) fraternities and sororities approached significance in relation to total property campus crime logs offenses reported per 100 students. Based on these findings, it is suggested that the presence of a football stadium, basketball arena, fraternities/sororities, and campus escort services be considered as variables for inclusion in multivariate analyses for all three models.

Table 16 illustrates the significance and Eta^2 values (in parentheses) for all binary independent variables reported for institutions with campus security departments

Table 16: Means and Groups Differences with Strength of Association (Eta^2) for Nominal-Ratio Variables: Campus Security Departments

Variable	Total Logs	Violent Logs	Property Logs	Missing
Ecological Factors				
Proximity to Major Interstate	.155 (.281)	.092 (.331)	.197 (.257)	1
Campus Transit/Bus System	.933 (.018)	.931 (.019)	.857 (.039)	5
Institution's Structural, Organizational and Recreational Features				
Presence of Social Fraternity/Sorority	.010 (.487)*	.076 (.347)	.026 (.427)*	1
Football Stadium	.002 (.568)*	.027 (.425)*	.002 (.557)*	1
Basketball Arena	.003 (.551)*	.047 (.386)*	.003 (.549)*	1
Multipurpose Arts/Entertainment Center	.009 (.492)*	.036 (.404)*	.011 (.481)*	1
Historic/Tourist Attractions	.067 (.358)	.123 (.304)	.063 (.363)	1
Hospital	n/a	n/a	n/a	
Research Laboratories	.004 (.534)*	.144 (.289)	.002 (.565)*	1
Campus Security Programming				
Campus Escort Service	.134 (.315)	.213 (.264)	.114 (.307)	6
Emergency Phones on Campus	.322 (.211)	.487 (.149)	.384 (.186)	5
Ability to Report Crimes Online	.018 (.501)*	.106 (.354)	.023 (.482)*	9

* Significant at the .05 level (2-tailed)
n= 28 institutions with campus security departments who submitted campus crime logs.
Note: Independent Samples t Tests were performed for all binary categorical variables.

As indicated in the table above, institutions with campus security departments are clearly more affected by the presence of certain features on their campuses as compared to institutions with campus police departments. Most of the variables representing institutional structure, organization, and recreation were significant or approached significance with one or all of the outcome variables. The Eta^2 scores all indicate a moderate degree of association between the variables. None of the variables representing campus security programming were significant except for the ability to report campus crimes online, which is significant in relation to the total and property campus crime log offenses reported per 100 students. It should be noted that the campus' proximity to a major interstate approached significance in relation to total violent campus crime logs offenses reported per 100 students. Based on these findings, it is suggested that the presence of a fraternity/sorority, football stadium, basketball arena, multipurpose arts/entertainment center, historic/tourist attractions, proximity to major interstate (violent/personal model only), and research laboratories be considered as variables for inclusion in all three regression models. Ability to report crimes online was significant; however, due to nine missing values it was removed from consideration for multivariate analysis.

Multiple Regression

Multiple regression aids in determining the relationship between a dependent variable and several independent variables. It must be determined which type(s) of multiple regression will be carried out. There are essentially three types of multiple regression including standard, sequential (hierarchical) and statistical (stepwise) (Tabachnick & Fidell, 2001). Standard regression involves all predictor values entering the regression equation at once with each being assessed as if entering the equation after all other predictors. In sequential regression, predictors are entered into the equation in the order entered by the researcher. Statistical regression is where the order of predictor entry is based solely upon statistical criteria rather than theory. Due to the small N-size of this study, as well as existing arguments against using stepwise regression, any type of statistical regression cannot be considered for the current research. Instead, standard regression ("enter all") will be utilized so that all the variables can be examined regardless of significance.

Models for Institutions with Campus Police Departments

Based upon the analyses discussed earlier, the following factors can be considered for inclusion in multiple regression analyses with all three models/outcomes unless otherwise noted:

- Percentage living on campus;
- Percentage of student body male;
- Percentage of student body under 24;
- Total alcohol-related offenses p/100 students (2 missing values);
- Total number of police/security officers p/100 students (1 missing value);
- Presence of football stadium;
- Presence of basketball arena;

- Presence of escort service; and,
- Presence of fraternity/sorority.

Thus, there will be three sets of multiple regression models for institutions with campus police departments. Before running the regression, it is imperative to determine if there are any multicollinearity issues among the listed ratio/highly interval independent variables. As such, collinearity diagnostics will be examined to determine if there is a problem and then, if so, bivariate correlations will be examined to determine which variable(s) to drop.

Multicollinearity exists when a correlation coefficient between two independent variables is greater than .90. In order to determine whether this condition was present in the dataset, a regression was run between the dependent variable and the independent variables listed above, ensuring that the collinearity box was checked. The Coefficient Table was the first table examined; in particular the tolerance column of the collinearity statistics section of the table. Tolerance is determined by subtracting the Standard Multiple Correlation (SMC) from one (1-SMC= tolerance). It is important to note that as SMC gets higher, the tolerance level, in turn gets lower. When the tolerance level approaches zero, it is likely that a collinearity issue exists. There was one independent variable's tolerance approaching zero, namely percentage students living on campus (.099).

The next table examined was the Collinearity Diagnostics Table, which includes both the condition index and variance of proportions. The condition index is a measure of the dependency of one variable on the others. Multicollinearity likely exists if there is a dimension with a condition index above 30 with at least two or more variables having a variance proportion above 50 percent. Both of these conditions were met. Dimension 6 held a condition index above 30 (38.712) and there were two variables with variances above 50 percent (.76 and .97). These

diagnostics clearly detected a collinearity issue within the datset. As such, one final step was conducted in order to resolve the issue at hand: bivariate correlation. Table 17 illustrates the bivariate correlations among the independent variables.

Table 17: Bivariate Correlations Among Independent Variables

Variable	Total Logs p/100 (DV)	% On campus	% Male	% Under 24	Alcohol Logs p/100	Officers p/100
Total Log Offenses p/100 (DV)	1.00	.648**	.532**	.514**	.867**	.767**
% Living on Campus	.648**	1.00	.571**	.881**	.606**	.745**
% Male Students	.532**	.571**	1.00	.444*	.478*	.513**
% Under 24 Years Old	.514**	.881**	.444*	1.00	.536**	.526**
Total Number of Alcohol-Related Offenses Reported p/100 students	.867**	.606**	.478*	.536**	1.00	.567**
Total Police/security officers p/100 students	.767**	.745**	.513**	.526**	.567**	1.00

n= 27 institutions with campus police departments who submitted campus crime logs
** Correlation significant at the .01 level (2-tailed)
* Correlation significant at the .05 level (2-tailed)

As seen in the table above, there is a correlation coefficient of .881 between percentage of students living on campus and percentage of student body under 24 years of age. Percentage living on campus has the larger correlation score with the dependent variable (.648) than percentage of student body under 24 years of age (.514). Thus, percentage living on campus is retained since it boasts the higher explanatory power. Upon closer examination of this table, two additional variables draw concern, namely total police/security per 100 students and total alcohol-related offenses reported p/100 students. It is argued that these variables may be more inherent outcomes of how many students are living on campus; hence the temporal relationship may be flawed in the sense that they are included as independent variables. They may better serve as dependent variables. Additionally, as mentioned earlier, the variation in enforcement of alcohol-violations across the various institutions brings concern as well. Future research may wish to obtain the number of alcohol-related arrests and further explore these relationships. In sum, due to this causality concern, both variables are removed for consideration from the multivariate models. This leaves two ratio variables, "percent living on campus" and "percent male student body," for inclusion in the final models for all three outcomes (total log, violent/personal log and property crime log offenses reported per 100 students). Thus, multiple regression will be used to analyze the influence percent of students living on campus, percent male enrollment, as well as the presence of a football stadium, basketball arena, security escort services, or social fraternities/sororities have on the total number of campus crime log offenses reported per 100 students at institutions with campus police departments.

Model 1A: Total Campus Crime Log Offenses Reported p/100 Students

The first set of models will examine the impact of the aforementioned predictor variables on the total reported campus crime log offenses per 100 students at institutions with campus police departments. For this set of models only (1A-1E), the reader is "walked through" the interpretation of the models followed by an illustration to help summarize such interpretations.

Model Summary

The Multiple R for this model is .678. This number indicates the strength of the relationship between the independent variables and the dependent variable. R^2 indicates the explanatory power of the regression model. In this case, R^2 equals .460 which means that 46 percent of the variance in the dependent variable is explained by the independent variables. It is unnecessary to report the adjusted R^2 because the current study is dealing with a population rather than a sample.

ANOVA Table

The ANOVA table aids in determining whether the model is statistically significant at the .05 level. In this particular table, the F-score and its significance are examined. This score does not tell how powerful the model is, but rather how *significant* it is. In other words, it determines the significance of the overall model. The model must be significant before moving forward. In this model, the F score is 10.228 with a significance of .001. The model is significant.

Coefficient Table

Per the requirements set forth, the significance of each independent variable should be statistically significant at the .05 level within the model. The t-score for percent living on campus is .446 with a significance of .010. The t-score for percent male enrollment is 1.330 with a significance of .196. Only percent of student body living on campus is significant.

Second, standardized coefficients, which remove units so one can make equal comparisons among the independent variables, are examined. These coefficients are derived based on standardized values of the independent variables and dependent variable. The Beta score for percent living on campus is .511 and for percent male enrollment is .242. Thus, percent living on campus has the largest impact upon the total number of campus crime logs offenses reported per 100 students.

Finally, the unstandardized coefficients column, which gives parameter values for estimation/projection, can be examined. The constant is the Y-value parameter for the equation. The constant value for the model is -1.321. Below the constant, are the regression coefficients (or slopes) for the independent variables. These values are derived from the least square criterion and estimate the contribution of the independent variable per unit to the dependent variable as well as the direction. The coefficient for percent living on campus is 5.640 and percent male enrollment is 5.077. Both coefficients are positive relations. With these figures, the base regression equation for this model can be constructed:

$$Y' = \text{Constant} + \text{slope1} * X_1 + \text{slope2} * X_2$$

$$Y' = -1.321 + 5.640 * \text{percentage living on campus} + 5.077 * \text{percentage male enrollment}$$

In other words, if one wishes to predict the total number of crime logs offenses reported per 100 students at institutions with campus police departments, one would take the coefficient of -1.321, multiply the percent living on campus by 5.640 and then add the percent male enrollment multiplied by 5.077. This is considered the "base model" for all subsequent analyses (1B- 1E).

The research will now focus on how the presence or absence of certain factors affect this base "total crime log offenses reported" regression model for institutions with campus police departments.

Model 1B: Presence of Football Stadium on Main Campus

Model Summary

The Multiple R for this model (.678) and R^2 (.460) remain the same with the inclusion of whether or not a football stadium is present on the main campus.

ANOVA Table

In this model, the F score is 6.535 with a significance of .002. The model is significant.

Coefficient Table

The t-score for percent living on campus is 2.479 with a significance of .021. The t-score for percent male enrollment is 1.297 with a significance of .207. The t-score for presence of a football stadium on the main campus is .022 with a significance of .983. Only percent of student body living on campus is significant.

The Beta score for percent living on campus is .509, percent male enrollment is .242 and presence of football stadium on main campus is .004. Thus, percent living on campus has the largest impact upon the total number of campus crime log offenses reported per 100 students.

The constant value for the model is -1.325. The coefficient for percent living on campus is 5.619, percent male enrollment is 5.071 and presence of football stadium is .025. All coefficients are positive relations. With these numbers, the regression equation for this model can be constructed:

Y' = -1.325 + 5.619 * percentage living on campus + 5.071 * percentage male enrollment + .025 * presence of football stadium

It appears that having a football stadium on the main campus of institutions with a campus police department has a small role in increasing the amount of reported crime log offenses. Specifically, the presence of a football stadium will increase the total amount of campus crime logs offenses reported by .025 per 100 students.

Model 1C: Presence of Basketball Arena on Main Campus

Model Summary

The Multiple R for this model is .687 with a R^2 of .472. The robustness of the base model is slightly improved when the presence of a basketball arena on the main campus is considered.

ANOVA Table

In this model, the F score is 6.851 with a significance of .002. The model is significant.

Coefficient Table

The t-score for percent living on campus is 1.937 with a significance of .065. The t-score for percent male enrollment is 1.406 with a significance of .173. The t-score for presence of a basketball arena on the main campus is .716 with a significance of .481.

The Beta score for percent living on campus is .425, percent male enrollment is .261 and presence of football stadium on main campus is .133. Thus, percent living on campus has the largest impact upon the total number of campus crime logs offenses reported per 100 students.

The constant value for the model is -1.928. The coefficient for percent living on campus is 4.693 and percent male enrollment is 5.480 and presence of football stadium is 1.016. All coefficients are positive relations. With these numbers, the regression equation for this model can be constructed:

Y' = -1.928 + 4.693 * percentage living on campus + 5.480 * percentage male enrollment + 1.016 * presence of basketball arena

It appears that having a basketball arena on the main campus of an institution with a campus police department has a small role in increasing the amount of reported crime log offenses; however, more so than the presence of a football stadium alone on a main campus. Specifically, the presence of a basketball arena will increase the total amount of campus crime log offenses reported by 1.016 per 100 students.

Model 1D: Presence of Safety Escort Services on Main Campus

Model Summary

The Multiple R for this model is .684 with a R^2 of .467. The robustness of the base model is slightly improved when the presence of a safety escort services on the main campus is considered, but not as much as the presence of a basketball stadium alone.

ANOVA Table

In this model, the F score is 6.722 with a significance of .002. The model is significant.

Coefficient Table

The t-score for percent living on campus is 2.820 with a significance of .010. The t-score for percent male enrollment is 1.394 with a significance of .177. The t-score for presence of a safety escort service on the main campus is .551 with a significance of .587. Only percent of students living on campus is significant.

The Beta score for percent living on campus is .534, percent male enrollment is .311 and presence of safety escort service on main campus is .119. Thus, percent living on campus has the largest impact upon the total number of campus crime logs offenses reported per 100 students.

The constant value for the model is -3.175. The coefficient for percent living on campus is 5.891 and percent male enrollment is 6.530 and presence of safety escort services is 1.204. All coefficients are positive relations. With these numbers, the regression equation for this model can be constructed:

Y' = -3.175 + 5.891 * percentage living on campus + 6.530 * percentage male enrollment + 1.204 * whether or not safety escort services are present on main campus.

It appears that having safety escort services available on the main campus of an institution with a campus police department has a small role in increasing the amount of reported crime log offenses; however, not as much as a basketball arena alone; more than a football stadium alone.

Model 1E: Presence of Social Fraternity/Sorority on Main Campus

Model Summary

The Multiple R for this model is .721 with a R^2 of .521. The robustness of the base model is significantly improved (R^2=.460) when the presence of social fraternities/sororities on the main campus is considered.

ANOVA Table

In this model, the F score is 8.324 with a significance of .001. The model is significant.

Coefficient Table

The t-score for percent living on campus is 2.540 with a significance of .018. The t-score for percent male enrollment is 1.570 with a significance of .130. The t-score for presence of social fraternities/sororities on the main campus is 1.702 with a significance of .102. Only percent of students living on campus is significant.

The Beta score for percent living on campus is .453, percent male enrollment is .277 and presence of social fraternities/sororities on main campus is .250. Thus, percent living on campus has the largest impact upon the total number of campus crime logs offenses reported per 100 students.

The constant value for the model is -2.240. The coefficient for percent living on campus is 5.002 and percent male enrollment is 5.805 and presence of social fraternities/sororities is 1.594. All coefficients are positive relations. With these numbers, the regression equation for this model can be constructed:

Y' = -2.24 + 5.002 * percentage living on campus + 5.805 * percentage male enrollment + 1.594 * presence of social fraternities/sororities

It appears that having social fraternities/sororities on the main campus of an institution with a campus police department has a pronounced role in increasing the amount of reported crime log

as compared to any of the other features considered alone. Specifically, the presence of a fraternity/sorority will increase the total amount of reported campus crime log offense by 1.594 per 100 students.

Discussion of Model One

For this set of models, when examining the significance of t-scores, percentage of students living on campus is the only variable that contributed significantly to each regression model. However, when considering the presence of certain factors on campus in the model, they certainly do not detract from the amount of reported campus crime at institutions with campus police departments. Each variable added to the base model (football stadium, basketball arena, safety escort services, and fraternity/sorority) slightly improved the robustness of the models. Each of these variables contributed to an increased, albeit slight, amount of total reported campus crime log offenses per 100 students at institutions with campus police departments. It would seem as if some of these factors would have had a larger impact; however, the impact may be mitigated if campus police departments are allocating an appropriate amount of resources during sporting events and social fraternity/sorority functions. Given the aggregate nature of the data, it is difficult to measure the true impact of a large sporting event on campus for specific dates and times. One would hope to see that the presence of safety escort services reduce the amount of crime reported per 100 students. In this model, the variable actually contributes to an *increase.* It could be that the nature of institutions with campus police departments inherently has more crime with the impact of escort services being minimal. Although, just like with any other crime prevention effort, even if safety escort services did prevent crimes from occurring, it would be difficult to measure how much. Table 18 provides a summary of the models discussed (1A-1E).

Table 18: Regression Models for Institutions with Campus Police Departments for Total Campus Crime Log Offenses Reported

Model	R	R2	F score (sig.)	t-score (sig.)	Beta scores	Constant	Coefficients
1A (base)	.678	.460	10.228 (.001)	-------	----	-1.321	------
% living on campus				.446 (.010)	.511		5.640
% male enrollment				1.33 (.196)	.242		5.077
1B	.678	.460	6.535 (.002)	-------	----	-1.325	------
% living on campus				2.479 (.021)	.509		5.619
% male enrollment				1.297 (.207)	.242		5.071
Football stadium				.022 (.983)	.004		.025
1C	.687	.472	6.851 (.002)	-------	----	-1.928	------
% living on campus				1.937 (.065)	.425		4.693
% male enrollment				1.406 (.173)	.261		5.480
Basketball arena				.716 (.481)	.133		1.016
1D	.684	.467	6.722 (.022)	-------	----	-3.175	------
% living on campus				2.820 (.010)	.534		5.891
% male enrollment				1.394 (.177)	.311		6.530
Safety escort services				.551 (.587)	.119		1.204
1E	.721	.521	8.324 (.001)	-------	----	-2.240	------
% living on campus				2.540 (.018)	.453		5.002
% male enrollment				1.570 (.130)	.277		5.805
Social fraternity/sorority				1.702 (.102)	.250		1.594

* n=27 institutions with campus police departments who submitted campus crime logs

Model 2A-2E: Violent/Personal Campus Crime Log Offenses Reported p/100 Students

The second set of models (2A-2E) will examine the impact of the aforementioned predictor variables on the total reported violent/personal campus crime log offenses per 100 students at institutions with campus police departments. Table 19 below illustrates the findings for all five models.

Table 19: Regression Models for Institutions with Campus Police Departments for Violent/Personal Campus Crime Log Offenses Reported

Model	R	R2	F score (sig.)	t-score (sig.)	Beta scores	Constant	Coefficients
2A (base)	.733	.538	13.956 (.000)	-------	----	-.227	------
% living on campus				2.507 (.019)	.422		.426
% male enrollment				2.411 (.024)	.406		.779
2B	.735	.540	9.000 (.000)	-------	----	-.233	------
% living on campus				2.083 (.049)	.395		.399
% male enrollment				2.334 (.029)	.402		.771
Football stadium				.340 (.737)	.057		.034
2C	.736	.542	9.070 (.000)	-------	----	-.261	------
% living on campus				1.814 (.083)	.371		.374
% male enrollment				2.413 (.024)	.418		.801
Basketball arena				.461 (.649)	.080		.056
2D	.759	.576	10.434 (.000)	-------	----	.171	------
% living on campus				2.186 (.039)	.369		.373
% male enrollment				1.222 (.234)	.243		.467
Safety escort services				-1.451 (.160)	-.279		-.259
2E	.766	.587	10.892 (.000)	-------	----	-.303	------
% living on campus				2.234 (.035)	.370		.374
% male enrollment				2.671 (.014)	.437		.839
Social fraternity/sorority				1.655 (.111)	.226		.132

* n=27 institutions with campus police departments who submitted campus crime logs

Discussion of Model Two

This particular set of models brings forth some interesting findings. Unlike the previous set of models, the impact of male enrollment plays a far greater role in models examining violent/personal offenses reported per 100 students. In the base model (2A), 53.8 percent of the variance is explained by percentage living on campus and percentage male enrollment. More importantly, the t-scores show that both variables contribute significantly to the prediction of total violent/personal campus crime log offenses reported per 100 students. Moreover, when looking at some of the subsequent models (2B, 2C and 2E), percentage male enrollment actually has the largest impact upon total violent/personal campus crime log offenses reported per 100 students when taking into consideration the presence of a football stadium, basketball arena, or social fraternity/sorority on the main campus. Similarly to the first set of models, one would have anticipated a larger impact of each of these three factors to the total amount of campus crime reported. Appropriate and effective allocation of resources or the limitations of aggregate data may be mitigating the true impact of these factors. When examining the presence of safety escort services, unlike the first set of models, the findings indicate a very slight decrease in the amount of reported violent/personal crime log offenses per 100 students. It is such a small impact (-.259) that one can not decisively conclude that the presence of this service is reducing the amount of reported violent/personal crimes on campus. Again, it could simply be that institutions with campus police departments recognize that their campuses have a higher prevalence of crime and, de facto offer the service.

Model 3A-3E: Property Campus Crime Log Offenses Reported p/100 Students

The third and final set of models (3A-3E) for institutions with campus police departments will examine the impact of the aforementioned predictor variables on the total reported property campus crime log offenses per 100 students. Table 20 below illustrates the findings for all five models.

Table 20: Regression Models for Institutions with Campus Police Departments for Property Campus Crime Log Offenses Reported

Model	R	R2	F score (sig.)	t-score (sig.)	Beta scores	Constant	Coefficients
3A (base)	.675	.456	10.058 (.001)	-------	----	-.586	------
% living on campus				2.998 (.006)	.548		4.528
% male enrollment				1.049 (.305)	.192		3.010
3B	.675	.456	6.427 (.003)	-------	----	-.579	------
% living on campus				2.678 (.013)	.552		4.564
% male enrollment				1.028 (.315)	.192		3.020
Football stadium				-.050 (.961)	-.009		- .044
3C	.686	.470	6.797 (.002)	-------	----	-1.081	------
% living on campus				2.066 (.050)	.454		3.755
% male enrollment				1.142 (.265)	.213		3.339
Basketball arena				.778 (.444)	.145		.829
3D	.688	.473	6.877 (.002)	-------	----	-2.736	------
% living on campus				3.097 (.005)	.583		4.819
% male enrollment				1.345 (.192)	.299		4.694
Safety escort services				.858 (.400)	.184		1.396
3E	.725	.526	8.516 (.001)	-------	----	-1.327	------
% living on campus				2.737 (.012)	.486		4.013
% male enrollment				1.307 (.204)	.229		3.598
Social fraternity/sorority				1.847 (.078)	.270		1.287

* n=27 institutions with campus police departments who submitted campus crime logs.

Discussion of Model Three

Similar to the other two sets of models, improvements to the robustness of the base model are seen with the addition of certain factors present on campus. However, unlike the second set of models, the role of percentage male enrollment is minimized. This third set of models, although slightly less robust, more closely reflect the first set of models for institutions with campus police departments, suggesting that male enrollment is more closely related with the amount of violent/personal crimes reported on campuses as compared to total and property crimes. In each of the models (3A-3E), percentage living on campus is the only variable that significantly contributes to the total property crime log offenses reported per 100 students. When examining coefficients the presence of a basketball arena and social fraternity/sorority both contribute to an increase in reported property crimes as predicted, whereas the presence of safety escort services contributes to an increase in property crimes reported, similar to the first set of models. The same explanation for this "increase" applies here. The finding that the presence of a football stadium somehow reduces the amount of property crime reported is curious. The coefficient is such a slight contribution (-.044) that it is best interpreted as having no or negligible impact on the amount of reported property crime per 100 students, rather than suggesting that it somehow contributes to a decrease.

Summary of Models for Institutions with Campus Police Departments

As discussed above, findings indicate that the percentage of students living on campus provides the most significant contribution to the explanation and prediction of crime log offenses reported per 100 students. Differences arise, however, when examining violent/personal offenses reported with percentage male enrollment providing the most significant contribution in some of the models. Interestingly, while certain factors on campus (e.g., basketball arena, football

stadium, social fraternity/sorority) contributed to an increase in the amount of crime reported, the increase was not nearly as much as predicted. In fact, none of these factors *significantly* contributed to any of the models for institutions with campus police departments. The implications of these findings will be discussed in Chapter Five.

Models for Institutions with Campus Security Departments

Based upon the bivariate analyses discussed earlier, the following factors can be considered for inclusion in multiple regression analyses with all three models/outcomes unless otherwise noted:

- Percentage living on campus;
- Percentage of student body under 24 (6 missing values);
- Total alcohol-related offenses p/100 students (11 missing values);
- Percentage all ages in poverty (violent/personal model only);
- Presence of football stadium (1 missing value);
- Presence of basketball arena (1 missing value);
- Presence of social sorority/fraternity (1 missing value);
- Presence of multipurpose arts/entertainment center (1 missing value);
- Presence of historic/tourist attractions (1 missing value);
- Presence of research laboratories (1 missing value); and,
- Proximity to major interstate is less than 3miles (violent/personal model only).

Once again, it is imperative to determine if there are any multicollinearity issues among the listed independent variables. Therefore, collinearity diagnostics will be examined to determine if there is a problem and, if so, bivariate correlations will be examined to determine which variable(s) to drop. After running a regression to determine collinearity diagnostics, the results suggested that a

collinearity issue did not exist. However, bivariate correlations were still examined to determine what was causing the data to "overfit".

Table 21: Bivariate Correlations Among Independent Variables

Variable	Total Logs p/100 (DV)	% On campus	% Under 24	Alcohol Logs p/100
Total Log Offenses p/100 (DV)	1.00	.833**	.694**	.794**
% Living on Campus	.833**	1.00	.632**	.518**
% Under 24 Years Old	.694**	.632**	1.00	.583**
Total Number of Alcohol-Related Offenses Reported p/100 students	.794**	.518**	.583**	1.00

n= 28 institutions with campus security departments who submitted campus crime logs
** Correlation significant at the .01 level (2-tailed)
* Correlation significant at the .05 level (2-tailed)

As seen in the table above, there is a correlation coefficient of .632 between percentage of students living on campus and percentage of student body under 24 years of age. Percentage living on campus has the larger correlation score with the dependent variable (.833) than percentage of student body under 24 years of age (.514). Thus, percentage living on campus is retained since it boasts the higher explanatory power. Again, the two variables "total police/security per 100 students" and "total alcohol-related offenses reported p/100 students" are of concern and are removed based upon the same arguments set forth for the campus police department models. This leaves one ratio variable, "percentage living on campus," for inclusion in the final model for two outcomes (total log and property log offenses reported per 100 students); and, two variables, "percentage living on campus" and "percentage of all ages in poverty" in the campus' surrounding city, county, or town for inclusion in the violent/personal log offense model.

Model 4A-4G: Total Campus Crime Log Offenses Reported p/100 Students

The fourth set of models (4A-4G) will examine the impact of the aforementioned predictor variables on the total reported campus crime log offenses per 100 students at institutions with campus security departments. Table 22 below illustrates the findings for all seven models.

Table 22: Regression Models for Institutions with Campus Security Departments for Total Campus Crime Log Offenses Reported

Model	R	R2	F score (sig.)	t-score (sig.)	Beta scores	Constant	Coefficients
4A (base)	.833	.694	50.008 (.000)	-------	----	-.112	------
% living on campus				7.072 (.000)	.833		5.749
4B	.858	.736	29.247 (.000)	-------	----	-.012	------
% living on campus				5.744 (.000)	.727		5.015
Football stadium				1.813 (.084)	.229		1.702
4C	.834	.695	23.982 (.000)	-------	----	-.011	------
% living on campus				5.255 (.000)	.863		5.953
Basketball arena				-.265 (.794)	-.043		-.184
4D	.837	.700	24.538 (.000)	-------	----	-.047	------
% living on campus				5.736 (.000)	.790		5.447
Social fraternity/sorority				.640 (.529)	.088		.485
4E	.837	.700	24.478 (.000)	-------	----	.103	------
% living on campus				5.765 (.000)	.894		6.165
Entertainment center				-.611 (.548)	-.095		-.394
4F	.834	.695	23.949 (.000)	-------	----	-.055	------
% living on campus				6.279 (.000)	.822		5.670
Historic/tourist attractions				.244 (.825)	.029		.132
4G	.833	.695	23.871 (.000)	-------	----	-.035	------
% living on campus				5.332 (.000)	.838		5.780
Research laboratories				-.045 (.965)	-.045		-.044

* n=28 institutions with campus security departments who submitted campus crime logs

Discussion of Model Four

As compared to all models for institutions with campus police departments, a significant increase in model robustness is appreciated for institutions with campus security departments. In this first set of models, percentage living on campus is the only variable that significantly contributes to the prediction of total crime log offenses reported per 100 students. When considering all other factors that may be present on campus, one can see that none make a significant contribution to the prediction of the outcome. In fact, when looking at the robustness of models 4B-4G, the models remain relatively unaffected by the addition of any such factors that one might predict to significantly influence total campus crime reported. Having a football stadium on campus is the only variable that almost reaches significance and accounts for a notable increase (1.702 reported crimes) per 100 students. All other variables (basketball arena, social fraternity/sorority, entertainment center, historic/tourist attractions, and research laboratories) suggest a minimal increase or even negligible decrease in the amount of reported crimes. Perhaps the impact, if any, of these variables is "washed out" given that so few of the institutions with campus security departments boast these factors on their campuses and/or those campuses that do have the features present possess the resources available to effectively mitigate the impact.

Model 5A-5H: Violent/Personal Campus Crime Log Offenses Reported p/100 Students

The fifth set of models (5A-5H) will examine the impact of the aforementioned predictor variables on the total violent/personal campus crime log offenses per 100 students at institutions with campus security departments. It should be noted that for this particular set of models, "all ages in poverty" is added to the base model. Table 23 below illustrates the findings for all eight models.

Table 23: Regression Models for Institutions with Campus Security Departments for Violent/Personal Campus Crime Log Offenses Reported

Model	R	R2	F score (sig.)	t-score (sig.)	Beta scores	Constant	Coefficients
5A (base)	.735	.540	12.313 (.000)	-------	----	.129	------
% living on campus				4.244 (.000)	.641		.338
All ages in poverty				-1.686 (.107)	-.255		-.817
5B	.739	.546	8.021 (.001)	-------	----	.126	------
% living on campus				3.505 (.002)	.601		.317
All ages in poverty				-1.584 (.129)	-.245		-.787
Football stadium				.530 (.602)	.091		.051
5C	.743	.552	8.2 (.001)	-------	----	.125	------
% living on campus				3.519 (.002)	.748		.395
All ages in poverty				-1.485 (.153)	-.232		-.743
Basketball arena				-.727 (.476)	-.152		-.049
5D	.737	.543	7.911 (.001)	-------	----	.134	------
% living on campus				3.829 (.001)	.671		.354
All ages in poverty				-1.685 (.108)	-.263		-.843
Social fraternity/sorority				-.360 (.723)	-.063		-.027
5E	.736	.541	7.857 (.001)	-------	----	.129	------
% living on campus				2.905 (.009)	.608		.321
All ages in poverty				-1.640 (.117)	-.266		-.854
Entertainment center				.234 (.817)	.048		.015
5F	.736	.541	7.863 (.001)	-------	----	.125	------
% living on campus				3.769 (.001)	.626		.330
All ages in poverty				-1.596 (.126)	-.249		-.800
Historic/tourist attractions				.250 (.805)	.042		.014
5G	.761	.579	9.175 (.001)	-------	----	.116	------
% living on campus				4.194 (.000)	.812		.428
All ages in poverty				-1.573 (.131)	-.234		-.751
Research laboratories				-1.369 (.186)	-.260		-.123

Table 23: Regression Models for Institutions with Campus Security Departments for Violent/Personal Campus Crime Log Offenses Reported (cont.)

Model	R	R2	F score (sig.)	t-score (sig.)	Beta scores	Constant	Coefficients
5H	.738	.544	7.957 (.001)	-------	----	.109	------
% living on campus				3.832 (.001)	.619		.327
All ages in poverty				-1.468 (.158)	-.235		-.755
Close proximity to interstate				. 439 (.666)	.073		.024

* n=28 institutions with campus security departments who submitted campus crime logs

Discussion of Model Five

Overall, the robustness of this set of models is reduced. Yet, similar to the first set of models for institutions with security departments, percentage living on campus is the only variable that significantly contributes to the outcome. Likewise, the consideration of various features on campus impacts the base model minimally, if at all. When examining the coefficients of various on campus features, each provides a negligible increase or decrease to the amount of violent/personal crime log offenses reported per 100 students. This could be due to the same reasons discussed above for Model Four. It is interesting to note the role of the "all ages in poverty" variable. Although it does not significantly contribute to any of the models, it suggests that campuses situated in cities, counties, or towns with a *low* percentage of all ages in poverty will have a lower amount of reported violent/personal crime log offenses reported per 100 students.

Model 6A-6G: Property Campus Crime Log Offenses Reported p/100 Students

The sixth and final set of models (6A-6G) will examine the impact of the aforementioned predictor variables on the total property campus crime log offenses per 100 students at institutions with campus security departments. Table 24 below illustrates the findings for all seven models.

Table 24: Regression Models for Institutions with Campus Security Departments for Property Campus Crime Log Offenses Reported

Model	R	R2	F score (sig.)	t-score (sig.)	Beta scores	Constant	Coefficients
6A	.822	.676	45.897 (.000)	-------	----	-.047	------
% living on campus				6.775 (.000)	.822		4.878
6B	.851	.724	27.572 (.000)	-------	----	-.026	------
% living on campus				5.469 (.000)	.707		4.197
Football stadium				1.916 (.069)	.248		1.581
6C	.822	.676	21.951 (.000)	-------	----	-.034	------
% living on campus				4.974 (.000)	.842		4.996
Basketball arena				-.172 (.865)	-.029		-.106
6D	.822	.676	21.922 (.000)	-------	----	-.049	------
% living on campus				5.694 (.000)	.815		4.835
Social fraternity/sorority				.104 (.918)	.015		.070
6E	.826	.682	22.557 (.000)	-------	----	.082	------
% living on campus				5.570 (.000)	.784		5.270
Entertainment center				1.847 (.078)	.059		-.370
6F	.823	.677	22.028 (.000)	-------	----	-.070	------
% living on campus				5.994 (.000)	.807		4.790
Historic/tourist attractions				.281 (.781)	.038		.147
6G	.823	.678	22.112 (.000)	-------	----	-.036	------
% living on campus				4.862 (.000)	.784		4.654
Research laboratories				.366 (.718)	.059		.315

* n=28 institutions with campus security departments who submitted campus crime logs.

Discussion of Model Six

The findings from this set of models are strikingly similar to the first set of models for institutions with campus security departments (4A-4G). In particular, the robustness of all models is improved with percentage living on campus as the only variable significantly contributing to the prediction of total property crime log offenses reported per 100 students.

Like Model Four, having a football stadium on campus is the only variable that approaches significance and accounts for a notable increase (1.581 reported property crimes) per 100 students. All other variables (basketball arena, social fraternity/sorority, entertainment center, historic/tourist attractions, and research laboratories) suggest a minimum increase or even negligible decrease in the amount of reported crimes. Once again, it may be that these variables are "washed out" given that so few of the institutions with campus security departments boast such factors on their campuses and/or those campuses that do have such factors possess the resources available to effectively mitigate the impact.

Summary of Models for Institutions with Campus Security Departments

Clearly, the percentage of students living on campus provides the strongest explanation and prediction of total, violent/personal, and property crime log offenses reported per 100 students at institutions with campus security departments. This makes intuitive sense as several of the institutions included in this population are community colleges, which do not have any students living on their campuses. It is also important to underscore the minimal impact of certain features on campus that one would otherwise predict having a significant impact upon the amount of reported campus crime. None of

these features set forth a significant contribution to the prediction of the outcomes. The implications of these findings will be discussed in Chapter Five.

Summary of Results

There are a number of findings that result from this study's descriptive, bivariate and multivariate examination of factors related to reported campus crime. At a descriptive level, one can appreciate the unique nature of each campus with extremely wide ranges in student body demographics, surrounding communities, organizational and recreational features on campus, and in the structure and operations of campus safety departments. The need to separate analyses by type of campus safety department became apparent; yet, the same diversity in demographics is still appreciated. Also, regardless of data source or type of campus safety department, the vast majority of reported campus crime is property crime. This distribution becomes even more apparent when examining VA IBR statistics and campus crime logs due to their inclusion of larceny and vandalism. On average, institutions with campus police departments record a higher amount of reported crime. Yet, keep in mind that campus police departments serve all Virginia public 4-year colleges and universities which tend to serve the largest student bodies.

Bivariate analysis revealed a number of factors that institutions with campus police and security departments will want to take into consideration when examining reported campus crime and making decisions regarding allocation of resources, such as percentage living on campus, percentage male enrollment, percentage of student body under 24 years of age, total alcohol-related offenses reported per 100 students, total officers per 100 students, and the presence of a football stadium, basketball arena, safety programming,

historic/tourist attractions, multipurpose arts/entertainment center, and/or research laboratories on their main campus. At the bivariate level, it appears that institutions with campus security departments were more significantly impacted by certain features present on campus as compared to campus police departments. However, this should not be interpreted as if such features do not significantly drain resources of any given campus police department.

Finally, at a multivariate level, across all models, the following findings are revealed:

- Percentage of students living on campus provides the most significant contribution to the explanation and prediction of total, violent/personal, and property campus crime log offenses reported per 100 students.
- Percentage male enrollment was also found to significantly contribute to violent/personal crime log offenses reported per 100 students at institutions with campus police departments.
- Certain features on campus contribute to the addition of reported crimes for some models. Even though it appears that the contribution is minimal, if multiple features are present on a campus, the additive impact cannot be dismissed.

The implications of all findings will be discussed further in Chapter Five. Specifically, the Chapter will present the study's overall summary and conclusions, with specific attention paid to major findings and implications, as well as limitations with recommendations for future research.

Chapter 5
Summary and Conclusions

The current study has established a thorough macro-level examination of reported campus crime at Virginia's institutions of higher education. The scope and nature of campus crime is revealed by an extensive review of the literature. Given that the seminal study on campus crime was not conducted until the late 1970s, one can surely appreciate the topic and its relative youth. Yet, many campus crime studies are out-dated, limited in scope, or inherently flawed due to a number of factors. Flaws often revolve around the type of campus crime data sources utilized or lack of theoretical consideration. With this in mind, the current research discusses sources of campus crime data delineating the strengths and limitations. Additionally, an in-depth overview of appropriate theoretical frameworks in which to place the reported campus crime findings is provided. The routine activity/lifestyle theory is the primary focus of this study. Conceptualization and operationalization of all variables included in the current study are described in detail. Research questions are utilized as the propositions set forth to examine given that the study is looking at a population rather than a sample. In order to answer these questions, a macro-level analysis of reported campus crime at Virginia's colleges and universities with either a campus police department or campus security department is conducted at the univariate, bivariate and multivariate levels within this theoretical framework.

Likewise, the current study sets forth a number of meaningful contributions vis-à-vis the literature. First, it provides a more up-to-date examination of campus crime correlates. Second, it provides the ability to examine institutions with campus security

departments due to the inclusion of campus crime logs as a source of reported campus crime. Previous research has been limited to institutions with campus police departments only. Third, previous research has examined UCR data for campus police departments; whereas, the current research utilizes NIBRS offenses. Finally, the current study examines a population (albeit small), rather than a sample like most previous research. Many findings and implications stemmed from this process and are delineated below to help determine which responses may be appropriate to address campus crime.

Limitations and Recommendations for Future Research

As stated earlier, limitations exist in every study and the current research is no exception. Acknowledging such theoretical and methodological limitations does not mean that the study is fatally flawed; rather, it gives readers parameters in which findings should be interpreted. There are a number of recommendations for future research based upon the limitations of the current study.

Sample Size and Generalizability

The scope of the current study is clearly limited in that it only focuses on colleges and universities in one state. The findings, therefore, are strictly generalizable to the population of 4-year public, 4-year private, and 2-year public higher education institutions in Virginia. Yet, "generalizability" comes with a caveat in this particular research. As will be discussed later in this Chapter, each institution is unique; therefore, the extent that findings can be generalized in any broad sense may be diminished. Additionally, like many previous campus crime studies, the current study is limited by a small n-size. Even though the current research is examining a population of institutions with campus police or

security departments in the Commonwealth of Virginia, 68 is still a small number. As such, it is recommended that future research examine other states or attempt to create a nationally representative sample of colleges and universities to help bolster the representativeness of findings.

Temporal Considerations

In general, campus environments have significantly changed over the past decade with increases in student enrollment and diversity, technology, and professionalism of campus police and security departments. Although this study contributes to an updated examination of campus crime correlates, it is still arguably out-dated given the recent changes on campuses post-September 11th and Virginia Tech. Since this time, additional security measures have been added at most campuses, such as improvements in building and residence hall access as well as multi-modal warning systems such as sirens and text messaging. None of these changes have been empirically examined and should provide for a fruitful area of new research.

Also, the current research is cross-sectional in nature. Future research may wish to consider a longitudinal design; however, there is considerable concern over the manner in which a campus safety department collects and records reported campus crimes for one year let alone from year-to-year. Mosher, Miethe and Phillips (2002) warn that, "given all the problems associated with the collection and coding of these data, it makes little sense to engage in cross-campus and overtime comparisons of the campus crime data" (p. 18). While the authors were referring to Clery Act statistics, it is probably an applicable warning for all sources of campus crime data.

Variables

There are a number of improvements that can be made in regards to the variables that were included in the current research. First, even though acknowledged upfront, when creating rates for certain variables in this study only the number of students was used as a denominator due to missing values for many institutions regarding their number of faculty and staff. Due to this, the true campus population is underestimated. Future research should, at a minimum, ensure that they retrieve not only the number of students enrolled but also, the number of faculty and staff. Consideration should also be given to ensuring that each group (students, faculty and staff) is defined similarly, whether as full-time equivalent (FTE) or headcount. Some research has also suggested that a proxy figure be developed that takes into consideration the degree that students, faculty, and staff utilize a campus including the following usage categories: "major," "moderate," and "minimal" (see, Brantingham & Brantingham, 1995).

Second, similar to recommendations by Bromley (1992), better proxies for variables related to the campus' surrounding community should be developed. While the current study retrieved variables for a given campus' surrounding city, county, or town, it may be argued that these figures are not necessarily indicative of the *immediate* surrounding area of a campus. More neighborhood-specific figures should be obtained.

Third, in order to attain a better understanding of the impact of structures on campus, such as the number of buildings, residence halls, and parking garages, the *capacity* of each needs to be collected. While the number of each of these variables was

collected in the current study, it was impossible to infer the true impact due to the variety of structural sizes and capacities.

Fourth, in regards to the general categories of campus crime utilized in the multivariate models (total, violent/personal, and property offenses reported per 100 student), future researchers are cautiously encouraged to determine a valid, reliable way to examine specific crime categories. However, based on the experience gained from the current research, the utility of examining any type of sexual assault is questionable due to inherent underreporting.

Unreported Crimes

None of the data sources discussed in the current study afford an examination of unreported crimes or crimes that officials are made aware of but choose to not report. Researchers and practitioners need to rely upon more than reported crime statistics as this provides a limited measure of campus crime. Relying solely upon officially reported data cannot capture all dimensions of campus crime and each can be criticized for seriously underestimating the true incidence of campus crime. Hence, it is vital that these reported data sources be juxtaposed with victimization surveys in order to obtain a more valid picture of campus crime. To rely solely upon official data inevitably leads to a distorted picture of campus crime that can only be ameliorated by taking into account unreported crime. While time and resource constraints are present in any study, future campus crime research will want to consider utilizing victimization surveys to help triangulate findings or, at the very least, have a better understanding of the nature of *unreported* campus crimes (see for example, Brantingham & Brantingham, 1994; Fisher et al., 2000; Henson & Stone,

1999). While lack of such triangulation/understanding of unreported campus crime is a significant limitation of the current research, the methodology employed will allow for a better and far more thorough understanding of campus crime that *is* reported.

Theoretical Considerations

It should be emphasized that it was never the intention of this study to directly test a theory, but rather to place the findings within an appropriate framework(s) for discussion. However, there are still useful recommendations that can be made for future research. The current study offers a macro-level analysis of campus crime. Future research may wish to focus on additional micro-analyses or even "multi-level" analyses. The latter would be most informative to help shed further light on the interaction between campus micro-dynamics (e.g., individual demographics, routine activity/lifestyle activities, etc.) and macro-dynamics (e.g., collective demographics, ecological factors, adjacent community, etc.) (See for example, Fisher et al., 1998; Sampson & Wooldredge, 1987). More research is needed that directly tests theory. Specifically, additional direct tests of the routine activity/lifestyle theory within the campus context would be a beneficial addition to the literature. With this in mind, researchers may wish to take into consideration the role of offender motivation within the routine activity framework (where criminal inclination is a given), which could be useful for explaining victimization (see, Gottfredson, 1981; Massey et al., 1989; Mustaine & Tewksbury, 1999; Schwartz & Pitts, 1995). Additional comparative studies could also prove valuable. Comparing and contrasting the nature of campus crime across various countries and cultures could illuminate some effective strategies that can be utilized to the same end- reducing campus crime. Finally, researchers

may wish to further explore the sociological notion of campuses as communities, as discussed in Chapter Two.

Discussion of Campus Crime Data Sources

Clery Act Statistics

Clery Act statistics might be dismissed as providing an accurate, *comprehensive* portrayal of campus crime due to its exclusion of crimes such as larceny and vandalism. However, credit must be given because these statistics are the only source of campus crime for all colleges and universities. Nevertheless, it must be underscored that far more accurate statistics are now readily available from other sources; however, not all colleges and universities use these mechanisms.

VA IBR Statistics

When looking at Virginia specifically, these statistics will become even more useful once the remaining institutions with campus police departments have the ability to report their crimes to the Virginia State Police. In 2004, only 21 campus police departments had that ability; as of 2007, only 22 institutions with campus police departments were included in the VSP's annual publication. Campus police departments reporting in NIBRS format should be encouraged to record as much supplemental information in regards to offender/victim demographics and relationships, and other information. More detailed accounts of the circumstances revolving around criminal incidents could be useful to campus safety administrators. Finally, one area where this data source could offer some additional information is in regards to campus security departments. Future research may attempt to contact surrounding local law enforcement

agencies to gather the number of calls for service to colleges and universities in their jurisdiction for yet another official campus crime data perspective.

Campus Crime Logs

Future researchers must be cautioned about the potentially arduous task of collecting, coding and analyzing campus crime logs. Again, the primary limitation of crime log data is that its usefulness is entirely dependent upon the accuracy and specificity of crime incidents recorded by campus police or security personnel. In the current study, it was shown that this source is a valid proxy for reported campus crime. Regardless, it may be a useful recommendation to encourage colleges and universities with campus police and security departments to report campus crimes more uniformly in their logs.

Currently, the only guidance Virginia campus administrators have regarding campus crime logs is the federal Clery Act. The federal guidelines are very general, only indicating that the date reported, time reported, nature of offense, general location, and, disposition of case (if known) be recorded and made available to the public. There is no indication as to *how* the offenses should be categorized. Additionally, there are no state-level Clery Act initiatives in Virginia regarding the compilation of crime logs (See Va. Code Ann §9.1-102). A good start may be to use the NIBRS coding schema (See Appendix H) for offenses. This would be a serious improvement where researchers could have increased reliability and validity and would be able to readily distinguish various levels of assaults and sex offenses on campus. In other words, both campus police and security departments should undergo the effort to be as uniform as possible in how they record offenses in crime

logs. This is especially important for campus security departments, who need to rely more on this source than the limited Clery Act statistics.

For both types of departments, the crime logs can be more useful than any other source in understanding the larger scope of criminal events on their specific campus. Campus safety administrators can evaluate the locations of reported crimes, the times at which they occur or are reported, as well as, the disposition of each reported crime. Conducting a complete assessment of the nature and types of crime, as well as ascertaining potential "hot spots" on campus could be very beneficial to campus security administrators. It would also be informative to see how certain crimes are handled, especially alcohol and drug/narcotic offenses. Many colleges and universities have some type of internal sanctioning body, typically judicial review boards. This offers a sometimes controversial way of handling campus crime. Future research may attempt to delve further into these types of statistics; however, depending on the structure and set-up of these bodies, researchers may have difficulty retrieving information due to FERPA concerns.

Major Findings and Policy Implications

The major findings of the current study were reported in Chapter Four; however, the implications of such findings need to be discussed further. First, it must be appreciated that each college and university campus is unique. Even institutions with multiple campuses need to take into account the varying demographics of each satellite campus. This notion is perhaps the most important overriding finding: there is no panacea to campus crime. Institutions will want to strongly consider adopting and *effectively* implementing policies and programs that are evidence-based and/or have been shown to be

effective at other campuses, especially those reflecting similar demographics. Yet, while the current study may be able to identify how certain features on or surrounding campuses contribute to campus crime or how similar institutions are faced with similar problems; at the end of the day, each college and university campus must account for their unique situation and remain flexible in their response to campus crime and safety issues as they arise.

Second, contrary to popular belief and media portrayals, it is readily apparent that the majority of reported campus crime is against property. Specifically, descriptive analyses reveal that the vast majority of reported offenses involve larcenies and vandalism. This has potentially important implications. Traditionally-aged students are notorious for being poor guardians of their property. It seems imperative that effective property crime prevention efforts and programs be instilled on campuses. Such efforts can be tailored towards deterring likely offenders, reducing the attractiveness of targets via target hardening and improving the capability of potential guardians of property. "Operation Identification" and other property-identification programs for items such as computers, laptops and bicycles can be utilized to help discourage theft and/or make it difficult to pawn or to keep for personal use. This initiative involves permanently marking or engraving personal property with traceable ownership information. Departments can go further by storing serial numbers if property is stolen to help identify an owner if property is retrieved. Programs such as these improve the *proactive* guardianship of both potential victims and guardians (the officers). Awareness, training, and improved/proper use of access control systems may help make students, faculty and staff more cognizant of

protecting their property. Some research has indicated the difficulty in changing the routines of persons; however, Sherman et al. (1989) believe that changing the routine activity of *places* is more effective and easier to implement. As such, future research may wish to measure the effectiveness of this approach in a campus environment.

Third, while property offenses consist of the majority of campus crime, the impact of alcohol and drug-related offenses cannot be denied. Based on previous research and findings from the current study, alcohol especially plays a significant role in many of the crimes reported on campuses. As described in Chapter Two, the tradition of drinking at colleges and universities has established a deeply entrenched culture that is consistently reinforced. The question then becomes how to change such a well-established norm. The National Institute on Alcohol Abuse and Alcoholism (NIAAA) (2002) established a "Task Force on College Drinking" and set forth a three-tiered intervention strategy for changing the drinking culture of campuses: the individual (student), the entire student body and the community. They also suggest that each campus is unique and must take into consideration their own specific alcohol-related issues. Assessment of the problem by campuses, identification of effective prevention and reduction programs and reliable/valid measures of outcomes to define success are all needed to make this approach a success.

Fourth, bivariate analysis reveal a number of significant correlations between student body demographics, some surrounding campus variables, campus police/security department funding and personnel, ecological factors, institutional structural, organization and recreational features, as well as safety programming offered. Findings show that institutions with campus security departments are impacted greater than campus police

departments in regard to features present on campus. As discussed in Chapter Four, this intuitively makes sense in that most campus security departments typically do not have the resources to handle large events on campus. They are often forced to over-allocate already thin resources or are forced to hire outside personnel (i.e., off-duty local law enforcement) to aid in security when a large event does take place on campus. Still, this finding should not be misconstrued to lead one to believe that campus police departments have an appropriate amount of resources given the activities occurring on their campuses. All of the variables included in this study undeniably impact the *operations* of campus police and security departments. The distinction lies within the parameters of what this study specifically examines: whether such factors make a *significant* impact on the amount of campus crime reported per 100 students.

Fifth, findings from regression models bring forth a couple of implications. All of the models in this study underscore not only the importance of how many students are living on any given campus regardless of safety department type, but also the significant impact of this variable upon all levels of reported campus crime: total, violent/personal, and property. With this in mind, campus security administrators and all other key stakeholders (e.g., administrators, residence hall directors/assistants, student affairs personnel) need to be aware of the impact of this factor. Careful consideration needs to be given to the potential consequences of increasing the number of students or other individuals (in some cases, institutions afford housing to faculty, staff and their families) living on campus via additional residence halls or other living accommodations. Campus security administrators should be included in the building and/or renovation of residence

halls to assess the overall security of each building and implement any changes deemed necessary. The principles of "Crime Prevention through Environmental Design (CPTED)" may prove to be especially beneficial (see for example, Robinson & Roh, 2007). Additionally, campus security officials can incorporate aspects of community-oriented policing by placing an officer or "satellite" office in each residence hall (see for example, Sloan & Lanier, 2007). This action would set forth an increased guardianship by having additional "eyes and ears" in the residence halls.

Careful selection and rigorous training for residence hall directors and assistants must be developed. These individuals need to coordinate with multiple key stakeholders (e.g., administrators, student life personnel, Greek affairs directors, athletic department personnel, and victim advocates) and offer *multiple* crime prevention programs that are meaningful for the students. While institutions with residence halls can expect a significant impact on the amount of reported crime, community colleges, on the other hand are expected to require fewer resources in addressing campus crime issues.

Results from the violent/personal model for institutions with campus police departments indicate that percentage male enrollment significantly contributes to the explanation and prediction of violent/personal crime log offenses reported per 100 students. This finding could have several implications. Campus security officials will, first, want to be aware of the overall demographic features of their student body. They may also wish to identify if a certain segment of the male population at their campus is contributing to such offenses. If there is no general pattern, the need for gender-specific crime prevention/deterrence programming may be appropriate. For instance, Hong (2000) argues

that most campus prevention programs fail to recognize the link between men and violence even though males are overrepresented as both victims and offenders. Thus, certain approaches may be more effective in reducing male victimization/offending than those tailored to a coeducational audience. If patterns do exist in segments of the male student body, perhaps even more tailored gender-specific programming can be provided. It would be interesting to determine, if statistics are available, the change in the amount and types of crime reported at campuses before and after becoming co-educational.

Sixth, as alluded to above, actions must be taken to further improve the accuracy of official campus crime data. In order to attain more valid statistics, campus police and security departments should be strongly encouraged to ameliorate any definitional disparities for reported crimes. While the advantages for researchers are evident, campus security administrators can arguably benefit from more uniform campus crime log recording practices, including increased professionalism, increased ability to compare data with other colleges and universities, and most importantly, the ability to provide a more effective response to crime and increased insight into which programs their campuses might benefit the most from. Again, having campus police and security departments uniformly categorize their campus crime logs according to NIBRS could have countless benefits for both practitioners and academics by affording an additional, valid proxy, especially for campus security departments. This could provide a great opportunity to further improve the quality of campus crime statistics via state-wide training. In Virginia, campus police departments can become either state- (VLESPC) or nationally- (CALEA) accredited. Both accreditation bodies provide directives on a number of vital areas.

VLEPSC currently includes 187 standards in four subject areas, including administration, operations, personnel, and training (See, http://www.dcjs.virginia.gov/accred/documents/6thEditionProgramManualv2.pdf?menuLevel=5&mID=18). As of 2009, there were four Virginia campus police departments that were state-accredited (College of William and Mary, Old Dominion University, Radford University, and Virginia Commonwealth University) with three more departments in the self-assessment phase (Ferrum College, James Madison University, and Norfolk State University). CALEA accreditation is separated into several areas, such as establishing written directives, developing analysis and review for managerial decision-making, preparedness programming, building community relationships, agency accountability, limiting liability and risk exposure, and pursuing professional excellence (See, http://www.calea.org/Online/CALEAPrograms/LawEnforcement/lawenfprogram.htm). As of 2009, there were three Virginia campus police departments that were nationally-accredited (George Mason University, University of Richmond, and Virginia Tech) and one in the self-assessment phase (University of Virginia). While these accreditation bodies offer excellent standards, it is not realistic to recommend that every campus police department be mandated to become accredited. This would be ideal; however, the amount of time, resources and money required to meet the standards to qualify is overwhelming for most campus police departments. Further, this is an option that is not even available to campus security departments. Nevertheless, it is recommended that both types of campus safety departments refer to these professional standards and strive to incorporate as many as possible in regards to training and other areas outlined.

In Virginia, another medium for information dissemination regarding the improvement of campus crime data and other recommendations is the Virginia Association of Campus Law Enforcement Administrators (VACLEA). This agency's purpose is to "promote professionalism in the field of law enforcement among the universities and colleges of Virginia thereby establishing a climate conducive to the achievement of academic excellence." This body holds several meetings a year and could provide for an appropriate venue for training regarding the improvement of campus crime data for both campus police and security officers.

Additionally, it should be noted that one of the outcomes of HJR122, which mandated the Crime Commission to study campus safety, was the development of the Office of Campus Policing and Security (OCPS) under the umbrella of the Virginia Department of Criminal Justice Services (See, http://www.dcjs.virginia.gov/vcss/ocps/?menuLevel=5&mID=18). The powers and duties of this Office are to establish minimum standards for: 1) employment, 2) job-entry and in-service training curricula; and, 3) certification requirements for campus security officers. This was a first attempt to create certification requirements for campus *security* officers, among other directives. Upon meeting with some of the individuals heading this Office, the primary concern was cost for campus security departments. Thus, the Office is developing a web-based certification training program for campus security officers. Second, the Office is charged with providing technical support and assistance to campus police and security departments on the establishment and implementation of uniform record keeping for sources such as campus crime logs. Once again, this is yet another

potential way of disseminating information on improving the accuracy of campus crime statistics. However, no guidance has been given on how records should be uniformly coded.

Taking a different angle to improving the accuracy of campus crime statistics, some researchers have suggested a heightened focus upon the role of victim reporting practices (Sloan et al., 1997). The notion of encouraging and improving the ease of reporting for victims, such as anonymous online reporting, could serve as an impetus for more accurate statistics since it would address the underreporting problem along with identifying additional victims that may need resources. If those victimized on campuses do not report their victimizations to the security officials, no type of campus crime data will accurately measure the true extent of campus crime. Security administrators should strongly consider disseminating surveys to students, faculty, and staff to help uncover the "dark figure" of crime on their campuses (see Bromley, 2007). All individuals and groups that frequent campuses should be made aware of any victim services available on or near campus that they can utilize.

Closing Remarks

It is with the hope that this study contributes significantly to the body of campus crime literature in a number of different ways via its models and methodology. Results indicate that the majority of reported campus crime is comprised of property offenses. Findings also reveal that percentage of students living on campus contributes significantly to the explanation and prediction of reported campus crime in all models for both campus police and security departments. This finding is consistent with previous research even

though this study utilized a new source of campus crime data. Percentage male enrollment was also found to significantly contribute to the explanation and prediction of violent/personal offenses reported. These findings should help both academicians and practitioners in identifying various ways of examining campus crime as well as fueling ideas for future research and appropriate responses to campus crime via awareness, programming, and resource allocation. This study does not argue that campus crime logs, let alone any campus crime statistic, exist as the sole basis of campus security decision-making. Rather, it is argued that by focusing on campus crime via multiple lenses, a more accurate and comprehensive understanding can be achieved. As a result of this increased insight, more effective responses can take place. As Sherlock Holmes said to Watson: "I had," said he, "come to an entirely erroneous conclusion which shows, my dear Watson, how dangerous it always is to reason from insufficient data."

-Sir Arthur Conan Doyle, "The Adventure of the Speckled Band," *The Strand,* February 1892.

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APPENDIX A

Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act- 2008 Amendments

Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act
2008 Amendments
As Adopted In The "Higher Education Opportunity Act" (Public Law 110-315)
Enacted Into Law August 14, 2008; Effective Immediately

Deleted Provisions In ~~Strikethrough~~. New Provisions In Bold

20 U.S.C. § 1092(f) Disclosure of campus security policy and campus crime statistics

(1) Each eligible institution participating in any program under this title, **other than a foreign institution higher education,** shall on August 1, 1991, begin to collect the following information with respect to campus crime statistics and campus security policies of that institution, and beginning September 1, 1992, and each year thereafter, prepare, publish, and distribute, through appropriate publications or mailings, to all current students and employees, and to any applicant for enrollment or employment upon request, an annual security report containing at least the following information with respect to the campus security policies and campus crime statistics of that institution:

(A) A statement of current campus policies regarding procedures and facilities for students and others to report criminal actions or other emergencies occurring on campus and policies concerning the institution's response to such reports.

(B) A statement of current policies concerning security and access to campus facilities, including campus residences, and security considerations used in the maintenance of campus facilities.

(C) A statement of current policies concerning campus law enforcement, including--

~~(i) the enforcement authority of security personnel, including their working relationship with State and local police agencies; and~~

~~(ii) policies which encourage accurate and prompt reporting of all crimes to the campus police and the appropriate police agencies.~~

(i) the law enforcement authority of campus security personnel;

(ii) the working relationship of campus security personnel with State and local law enforcement agencies, including whether the institution has agreements with such agencies, such as written memoranda of understanding, for the investigation of alleged criminal offenses; and

(iii) policies which encourage accurate and prompt reporting of all crimes to the campus police and the appropriate law enforcement agencies.

(D) A description of the type and frequency of programs designed to inform students and employees about campus security procedures and practices and to encourage students and employees to be responsible for their own security and the security of others.

(E) A description of programs designed to inform students and employees about the prevention of crimes.

(F) Statistics concerning the occurrence on campus, in or on noncampus buildings or property, and on public property during the most recent calendar year, and during the 2 preceding calendar years for which data are available--

(i) of the following criminal offenses reported to campus security authorities or local police agencies:

(I) murder;

(II) sex offenses, forcible or nonforcible;

(III) robbery;

(IV) aggravated assault;

(V) burglary;

(VI) motor vehicle theft;

(VII) manslaughter;

(VIII) arson; and

(IX) arrests or persons referred for campus disciplinary action for liquor law violations, drug-related violations, and weapons possession; and

(ii) of the crimes described in subclauses (I) through (VIII) of ~~clause (i), and~~ **clause (i), of larceny-theft, simple assault, intimidation, and destruction, damage, or vandalism of property, and of** other crimes involving bodily injury to any person, in which the victim is intentionally selected because of the actual or perceived race, gender, religion, sexual orientation, ethnicity, or disability of the victim that are reported to campus security authorities or local police agencies, which data shall be collected and reported according to category of prejudice.

(G) A statement of policy concerning the monitoring and recording through local police agencies of criminal activity at off-campus student organizations which are recognized by the institution and that are engaged in by students attending the institution, including those student organizations with off-campus housing facilities.

(H) A statement of policy regarding the possession, use, and sale of alcoholic beverages and enforcement of State underage drinking laws and a statement of policy regarding the possession, use, and sale of illegal drugs and enforcement of Federal and State drug laws and a description of any drug or alcohol abuse education programs as required under section 120 of this Act [20 USCS § 1011i].

(I) A statement advising the campus community where law enforcement agency information provided by a State under section 170101(j) of the Violent Crime Control and Law Enforcement Act of 1994 (42 U.S.C. 14071(j)), concerning registered sex offenders may be obtained, such as the law enforcement office of the institution, a local law enforcement agency with jurisdiction for the campus, or a computer network address.

(J) A statement of current campus policies regarding immediate emergency response and evacuation procedures, including the use of electronic and cellular communication (if appropriate), which policies shall include procedures to-

(i) immediately notify the campus community upon the confirmation of a significant emergency or dangerous situation involving an immediate threat to the health or safety of students or staff occurring on the campus, as defined in paragraph (6), unless issuing a notification will compromise efforts to contain the emergency;

(ii) publicize emergency response and evacuation procedures on an annual basis in a manner designed to reach students and staff; and

(iii) test emergency response and evacuation procedures on an annual basis.

(2) Nothing in this subsection shall be construed to authorize the Secretary to require particular policies, procedures, or practices by institutions of higher education with respect to campus crimes or campus security.

(3) Each institution participating in any program under this title shall make timely reports to the campus community on crimes considered to be a threat to other students and employees described in paragraph (1)(F) that are reported to campus security or local law police agencies. Such reports shall be provided to students and employees in a manner that is timely and that will aid in the prevention of similar occurrences.

(4) (A) Each institution participating in any program under this title that maintains a police or security department of any kind shall make, keep, and maintain a daily log, written in a form that can be easily understood, recording all crimes reported to such police or security department, including--

(i) the nature, date, time, and general location of each crime; and

(ii) the disposition of the complaint, if known.

(B) (i) All entries that are required pursuant to this paragraph shall, except where disclosure of such information is prohibited by law or such disclosure would jeopardize the confidentiality of the victim, be open to public inspection within two business days of the initial report being made to the department or a campus security authority.

(ii) If new information about an entry into a log becomes available to a police or security department, then the new information shall be recorded in the log not later than two business days after the information becomes available to the police or security department.

(iii) If there is clear and convincing evidence that the release of such information would jeopardize an ongoing criminal investigation or the safety of an individual, cause a suspect to flee or evade detection, or result in the destruction of evidence, such information may be withheld until that damage is no longer likely to occur from the release of such information.

(5) On an annual basis, each institution participating in any program under this title shall submit to the Secretary a copy of the statistics required to be made available under paragraph (1)(F). The Secretary shall--

(A) review such statistics and report to the ~~Committee on Education and the Workforce of the House of Representatives and the Committee on Labor and Human Resources of the Senate~~ **authorizing committees** on campus crime statistics by September 1, 2000;

(B) make copies of the statistics submitted to the Secretary available to the public; and

(C) in coordination with representatives of institutions of higher education, identify exemplary campus security policies, procedures, and practices and disseminate information concerning those policies, procedures, and practices that have proven effective in the reduction of campus crime.

(6) (A) In this subsection:

(i) The term "campus" means--

(I) any building or property owned or controlled by an institution of higher education within the same reasonably contiguous geographic area of the institution and used by the institution in direct support of, or in a manner related to, the institution's educational purposes, including residence halls; and

(II) property within the same reasonably contiguous geographic area of the institution that is owned by the institution but controlled by another person, is used by students, and supports institutional purposes (such as a food or other retail vendor).

(ii) The term "noncampus building or property" means--

(I) any building or property owned or controlled by a student organization recognized by the institution; and

(II) any building or property (other than a branch campus) owned or controlled by an institution of higher education that is used in direct support of, or in relation to, the institution's educational purposes, is used by students, and is not within the same reasonably contiguous geographic area of the institution.

(iii) The term "public property" means all public property that is within the same reasonably contiguous geographic area of the institution, such as a sidewalk, a street, other thoroughfare, or parking facility, and is adjacent to a facility owned or controlled by the institution if the facility is used by the institution in direct support of, or in a manner related to the institution's educational purposes.

(B) In cases where branch campuses of an institution of higher education, schools within an institution of higher education, or administrative divisions within an institution are not within a reasonably contiguous geographic area, such entities shall be considered separate campuses for purposes of the reporting requirements of this section.

(7) The statistics described in paragraphs (1)(F) shall be compiled in accordance with the definitions used in the uniform crime reporting system of the Department of Justice, Federal Bureau of Investigation, and the modifications in such definitions as implemented pursuant to the Hate Crime Statistics Act [28 USCS § 534 note]. Such statistics shall not identify victims of crimes or persons accused of crimes.

(8) (A) Each institution of higher education participating in any program under this title shall develop and distribute as part of the report described in paragraph (1) a statement of policy regarding--

(i) such institution's campus sexual assault programs, which shall be aimed at prevention of sex offenses; and

(ii) the procedures followed once a sex offense has occurred.

(B) The policy described in subparagraph (A) shall address the following areas:

(i) Education programs to promote the awareness of rape, acquaintance rape, and other sex offenses.

(ii) Possible sanctions to be imposed following the final determination of an on-campus disciplinary procedure regarding rape, acquaintance rape, or other sex offenses, forcible or nonforcible.

(iii) Procedures students should follow if a sex offense occurs, including who should be contacted, the importance of preserving evidence as may be necessary to the proof of criminal sexual assault, and to whom the alleged offense should be reported.

(iv) Procedures for on-campus disciplinary action in cases of alleged sexual assault, which shall include a clear statement that--

(I) the accuser and the accused are entitled to the same opportunities to have others present during a campus disciplinary proceeding; and

(II) both the accuser and the accused shall be informed of the outcome of any campus disciplinary proceeding brought alleging a sexual assault.

(v) Informing students of their options to notify proper law enforcement authorities, including on-campus and local police, and the option to be assisted by campus authorities in notifying such authorities, if the student so chooses.

(vi) Notification of students of existing counseling, mental health or student services for victims of sexual assault, both on campus and in the community.

(vii) Notification of students of options for, and available assistance in, changing academic and living situations after an alleged sexual assault incident, if so requested by the victim and if such changes are reasonably available.

(C) Nothing in this paragraph shall be construed to confer a private right of action upon any person to enforce the provisions of this paragraph.

(9) The Secretary shall provide technical assistance in complying with the provisions of this section to an institution of higher education who requests such assistance.

(10) Nothing in this section shall be construed to require the reporting or disclosure of privileged information.

(11) The Secretary shall report to the appropriate committees of Congress each institution of higher education that the Secretary determines is not in compliance with the reporting requirements of this subsection.

(12) For purposes of reporting the statistics with respect to crimes described in paragraph (1)(F), an institution of higher education shall distinguish, by means of separate categories, any criminal offenses that occur--

(A) on campus;

(B) in or on a noncampus building or property;

(C) on public property; and

(D) in dormitories or other residential facilities for students on campus.

(13) Upon a determination pursuant to section 487(c)(3)(B) [20 USCS § 1094(c)(3)(B)] that an institution of higher education has substantially misrepresented the number, location, or nature of the crimes required to be reported under this subsection, the Secretary shall impose a civil penalty upon the

institution in the same amount and pursuant to the same procedures as a civil penalty is imposed under section 487(c)(3)(B) [20 USCS § 1094(c)(3)(B)].

(14) (A) Nothing in this subsection may be construed to--

(i) create a cause of action against any institution of higher education or any employee of such an institution for any civil liability; or

(ii) establish any standard of care.

(B) Notwithstanding any other provision of law, evidence regarding compliance or noncompliance with this subsection shall not be admissible as evidence in any proceeding of any court, agency, board, or other entity, except with respect to an action to enforce this subsection.

(15) The Secretary shall annually report to the authorizing committees regarding compliance with this subsection by institutions of higher education, including an up-to-date report on the Secretary's monitoring of such compliance.

(16) The Secretary may seek the advice and counsel of the Attorney General concerning the development, and dissemination to institutions of higher education, of best practices information about campus safety and emergencies.

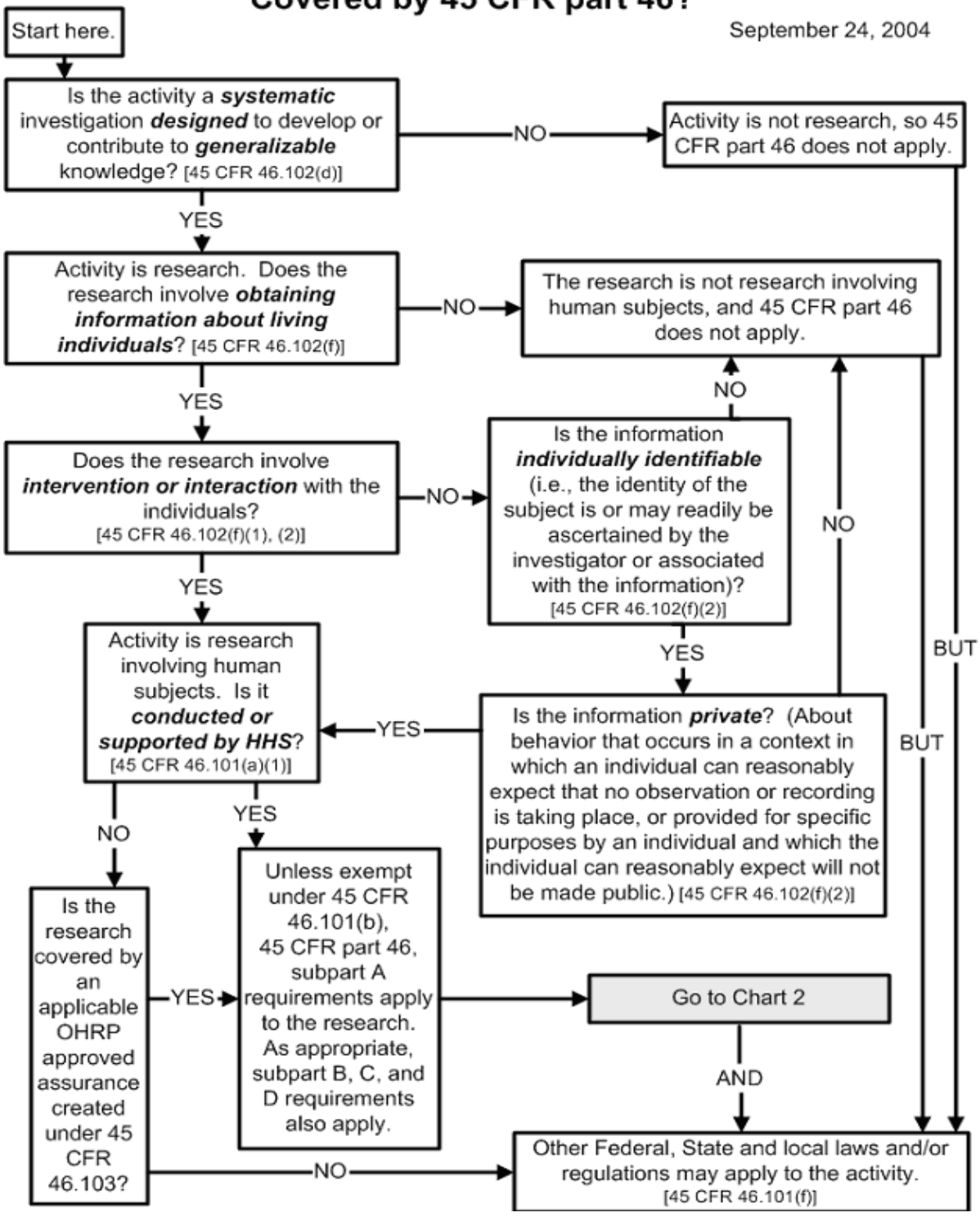
(17) Nothing in this subsection shall be construed to permit an institution, or an officer, employee, or agent of an institution, participating in any program under this title to retaliate, intimidate, threaten, coerce, or otherwise discriminate against any individual with respect to the implementation of any provision of this subsection.

(18) This subsection may be cited as the "Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act".

APPENDIX B

Human Subject Regulations Decision Chart
(45 CFR part 46 does not apply)

Chart 1: Is an Activity Research Involving Human Subjects Covered by 45 CFR part 46?



APPENDIX C

House Joint Resolution 122 (HJR 122)

ENROLLED

HOUSE JOINT RESOLUTION NO. 122

Directing the Virginia State Crime Commission to study campus safety at Virginia's public and private institutions of higher education. Report.

Agreed to by the House of Delegates, March 10, 2004
Agreed to by the Senate, March 9, 2004

WHEREAS, numerous aggravated assaults, sexual offenses, robberies, burglaries and other serious crimes are committed every year on the campuses of Virginia's institutions of higher education; and

WHEREAS, institutions of higher education around the country as well as private campus safety organizations have developed innovative campus safety programs that would be beneficial to Virginia colleges; and

WHEREAS, the Virginia Center for School Safety is developing a list of best practices of safety procedures for elementary and secondary schools; and

WHEREAS, no such information has been developed for the system of higher education; and

WHEREAS, information about best practices of campus safety programs and policies would be extremely beneficial to the security of students attending Virginia institutions of higher education; and

WHEREAS, personal safety and security are crucial preconditions that facilitate learning on college campuses; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the Virginia State Crime Commission be directed to study campus safety at Virginia's public and private institutions of higher education. The study shall examine (i) current Virginia policies, procedures, and programs used to promote safety at institutions of higher education; (ii) the nature of criminal offenses at Virginia's public and private institutions of higher education; (iii) the use of best practices or models for campus safety nationally; and (iv) the need to develop statewide procedures to ensure the dissemination of information pertaining to best practices for campus safety to Virginia's public and private institutions of higher education.

Technical assistance shall be provided to the Commission by the Secretary of Education, the General and Professional Advisory Committee and the Student Affairs Advisory Committee to the State Council of Higher Education for Virginia, and the Council of Independent Colleges in Virginia. All agencies of the Commonwealth shall provide assistance to the Commission for this study, upon request.

The Virginia State Crime Commission shall complete its meetings by November 30, 2004, and the Chairman of the Commission shall submit to the Division of Legislative Automated Systems an executive summary of its findings and recommendations no later than the first day of the 2005 Regular Session of the General Assembly. The executive summary shall state whether the Commission intends to submit to the General Assembly and the Governor a report of its findings and recommendations for publication as a document. The executive summary and report shall be submitted as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents and reports and shall be posted on the General Assembly's website.

APPENDIX D

List of Virginia Colleges and Universities Included in Original Virginia State Crime Commission Study

Appalachian School of Law	Patrick Henry Community College
Averett University	Paul D. Camp Community College
Baptist Theological Seminary at Richmond	Piedmont Virginia Community College
Blue Ridge Community College	Radford University
Bluefield Community College	Randolph-Macon College
Bridgewater College	Randolph College
Central Virginia Community College	Rappahannock Community College
Christopher Newport University	Richard Bland College
College of William and Mary	Roanoke College
Dabney S. Lancaster Community College	Saint Paul's College
Danville Community College	Shenandoah University
Eastern Mennonite University	Southern Virginia University
Eastern Shore Community College	Southside Regional Medical Center
Eastern Virginia Medical School	Southside Virginia Community College
Emory and Henry College	Southwest Virginia Community College
Ferrum College	Sweet Briar College
George Mason University	Thomas Nelson Community College
Germanna Community College	Tidewater Community College
Hampden-Sydney College	Union Theological Seminary
Hampton University	University of Mary Washington
Hollins University	University of Richmond

J. Sargeant Reynolds Community College	University of Virginia
James Madison University	University of Virginia's College at Wise
John Tyler Community College	Virginia Commonwealth University
Liberty University	Virginia Highlands Community College
Longwood College	Virginia Intermont College
Lord Fairfax Community College	Virginia Military Institute
Lynchburg College	Virginia Polytechnic Institute
Mary Baldwin College	Virginia State University
Marymount College	Virginia Union University
Mountain Empire Community College	Virginia Wesleyan College
New River Community College	Virginia Western Community College
Norfolk State University	Washington and Lee University
Northern Virginia Community College	Wytheville Community College
Old Dominion University	

APPENDIX E

Virginia State Crime Commission Campus Police Department Survey

APPENDIX F

Virginia State Crime Commission Campus Security Department Survey

APPENDIX G

Initial Letter Request for Campus Crime Logs

April 11, 2008

Chief or Director
University
Address One
Address Two

Dear Chief _____:

I am writing to request your assistance in providing me with crime log information. I am currently an instructor and Ph.D. Candidate in the L. Douglas Wilder School of Government and Public Affairs at Virginia Commonwealth University. You may remember working with me as an analyst with the Virginia State Crime Commission during their comprehensive campus safety study. My work on that project has led me to focus on campus crime and victimization for my dissertation. I need the following information to complete my data set:

- **Crime Log Copies from July 1, 2004- December 31, 2004. These records should list all crimes reported and the dispositions for each day of this period. (See *CFR, Title 34, §668.46(f(1)).**

I understand that your crime logs may be computerized and if that is the case, you can send them to me electronically: barnescm2@vcu.edu or send copies to:

Ms. Christina Barnes
Virginia Commonwealth University
923 West Franklin Street
P.O. Box 842028
Richmond, Virginia 23284-2028

I realize that campus safety is an extremely important issue that affects students, parents, faculty, administrators and the overall higher education system. I am very excited to complete my dissertation so I can provide meaningful findings to campus safety practitioners like you.

If you have any questions about the data request or my research, please do not hesitate to contact me.

Best Regards,

Christina M. Barnes

APPENDIX H

NIBRS Coding Schema

Group "A" (NIBRS) offense codes

Arson	200
Assault Offenses	
Aggravated Assault	13A
Simple Assault	13B
Intimidation	13C
Bribery	510
Burglary/Breaking & Entering	220
Counterfeiting/Forgery	250
Destruction/Damage/Vandalism	290
Drug/Narcotic Offenses	
Drug/Narcotic Violation	35A
Drug/Equipment Violation	35B
Embezzlement	270
Extortion/Blackmail	210
Fraud Offenses	
False Pret/Swindle/Con	26A
Credit Card/ATM Fraud	26B
Impersonation	26C
Welfare Fraud	26D
Wire Fraud	26E
Gambling Offenses	
Betting/Wagering	39A
Operate/Promote/Assist	39B
Gambling Equipment	39C
Sports Tampering	39D
Homicide Offense	
Murder/Nonnegligent/ Manslaughter	09A
Negligent Manslaughter	09B
Justifiable Homicide	09C
Kidnapping/Abduction	100
Larceny/Theft Offenses	
Pocket-picking	23A
Purse-snatching	23B
Shoplifting	23C
Theft from Building	23D
Coin-op Machine or Device	23E
From Motor Vehicle	23F
Of Motor Vehicle Parts	23G
All other Larceny	23H
Motor Vehicle Theft	240
Pornography/Obscene Material	370
Prostitution Offenses	
Prostitution	40A
Assist/Promote Prostitution	40B
Robbery	120

Group "A" (NIBRS) offense codes continued

Sex Offenses, Forcible	
Forcible Rape	11A
Forcible Sodomy	11B
Sexual Assault w/object	11C
Forcible Fondling	11D
Sex Offenses, Nonforcible	
Incest	36A
Statutory Rape	36B
Stolen Property Offenses	280
Weapon Law Violation	520

Group "B" (NIBRS) offenses codes

Bad Check	90A
Curfew/Loitering/Vagrancy	90B
Disorderly Conduct	90C
DUI	90D
Drunkenness	90E
Family Offenses, Nonviolent	90F
Liquor Law Violations	90G
Peeping Tom	90H
Runaway	90I
Trespass of Real Property	90J
All Other Offenses	90Z

VITA

Christina M. Barnes was born in Pittsburgh, PA and raised in McMurray, PA. She graduated from Canon-McMillan High School in 1998. Ms. Barnes received her Bachelor of Science degrees in Social Sciences (Criminal Justice concentration) and Equine Science from Lake Erie College (Painesville, OH) in 2002. She later received her Masters of Science in Criminal Justice from Virginia Commonwealth University in 2004. Ms. Barnes was awarded the Edward E. Willey Scholarship in 2003 (Masters) and 2006 (Ph.D.), the Leigh E. Grosenick Award in 2006 (best doctoral paper by doctoral student in Public Policy and Administration program), and the Outstanding Graduate Student Award in 2003.

Ms. Barnes has worked with the Virginia State Crime Commission since 2003 and is currently their Senior Methodologist. She began teaching as an adjunct at Virginia Commonwealth University in 2004 and was hired as a full-time faculty member in 2007. Ms. Barnes has several publications and has presented at various conferences in the U.S. and abroad. Ms. Barnes currently resides in Caroline County, Virginia.