

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

TOBACCO CONTROL POLICIES: COMPLIANCE AND SUPPORT FOR SMOKE-  
FREE SCHOOL POLICY AT CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

A thesis submitted in partial fulfillment of the requirements

For the degree of Master of Public Health,

in Health Education

By

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## DEDICATION

This thesis is dedicated to the loving memory of both of my grandfathers, Moosa Mikail and Davood Aslemand. Although they are no longer here, they will forever be a part of my life and always in my heart.

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## ABSTRACT

### TOBACCO CONTROL POLICIES: COMPLIANCE AND SUPPORT FOR SMOKE-FREE SCHOOL POLICIES AT CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

By

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Despite the reductions of the smoking rate in the United States, tobacco use remains a public health concern especially among college students. Young adults in the United States have the highest prevalence of tobacco use among any other age group. To lower smoking rates on college campuses, several national organizations recommend that colleges and universities implement and enforce stronger tobacco control and prevention policies.

This study examines students, staff and faculty attitudes towards the current California State University, Northridge (CSUN) smoking policy and their preferences regarding stronger tobacco control policies on campus. The study also looks at student, staff and faculty exposure to secondhand smoke on campus. Tobacco use behavior is also measured among participants. The sample consisted of 805 students, staff and faculty. The majority of students, staff and faculty perceived the current CSUN smoking policy as ineffective and indicated a strong support towards implementation of a 100% smoke-free or a 100% tobacco-free campus policy. It was also shown that secondhand smoke exposure is a problem at CSUN in which students, staff and faculty are constantly

exposed while on campus. The large amount of support for a stronger more effective tobacco policy on campus should be reassurance for university administrators to work towards implementing and enforcing a stronger tobacco control policy at CSUN.

*Key words: smoking policies, college students, tobacco control, university health and safety, policy effectiveness, health promotion*

## CHAPTER 1: INTRODUCTION

### Background of Study

Tobacco use causes more deaths in the United States than AIDS, alcohol abuse, drug abuse, motor vehicle injuries, murder and suicides combined (Centers for Disease Control and Prevention [CDC], 2006). Each year smoking related illnesses kill approximately 443,000 Americans (U.S. Department of Health and Human Services [HHS], 2012). Currently, there are 8.6 million Americans living with a serious illness caused by smoking (HHS, 2012). Cigarette waste is the most common form of litter worldwide and is considered a toxic waste in the environment (Novotny, Lum, Smith, Wang, & Barnes, 2009). Considerable progress has been made since the first U.S. Surgeon General report in 1964 to decrease tobacco use. These have included various campaigns, awareness movements and strong tobacco-free policies (HHS, 2012). Despite the known health risks, cigarette smoking is still very common among youth and young adults (HHS, 2012). Every year, just over one-million people in the United States become new tobacco users (HHS, 2012). One out of four high school seniors are regular cigarette smokers with 80% of them continuing their smoking habit as adults (HHS, 2012). In the United States, young adults ages 18 to 24 have the highest rate of tobacco use compared with all other age groups (Rodgers, 2012). Estimates show that 24% of young adults use tobacco and that one in three of these young adults are enrolled in college (Rodgers, 2012). According to the California Department of Public Health, young adults have the highest prevalence of tobacco use among any age group (2006). It is estimated that 14.6% of California young adults 18-24 years of age are current smokers (California Tobacco Control Program, 2012). A random selection of students who attend

California State University, Northridge (CSUN) were asked to participate in the National College Health Assessment conducted by the American College Health Association (ACHA) in the Spring 2013 semester. Results of the assessment showed that 14.8% of male students and 8.9% of female students reported use of cigarettes within the last 30 days (American College Health Association, 2013).

The transition to college is an important stage in a young adult's life. It represents freedom to make their own choices and it may lead to the decision to start engaging in risky behaviors such as smoking. Factors like stress, mood, peer pressure and emotional coping can increase students' likelihood to initiate smoking behavior. Students that have never smoked may start experimenting with tobacco and students who smoke before starting college may become more frequent and heavier smokers (Patterson, Lerman, Kaufmann, Neuner, & Audrain-McGovern, 2004). Compared to the general population, usage of cigarettes by college students has been an important concern since they have "substantially higher prevalence rates of smoking" (Borders, Xu, Bacchi, Cohen, & SoRelle-Miner, 2005). Further, after the Master Settlement Agreement in 1998, the tobacco industry started targeting young adults as their earliest legal demographic (Baille, Callaghan, & Smith, 2011).

### **Statement of the Problem**

College campuses are associated with places of leadership, learning, enlightenment and change. Currently, smoking policies on college campuses is a debatable topic as many colleges and universities are transitioning towards comprehensive tobacco-free policies. Smoking on college campuses "not only affects the individual's health but also exposes others to secondhand smoke" (Americans

Nonsmokers' Rights Foundation [ANR], 2013). Cigarette waste litter has also become very apparent throughout colleges and universities across the U.S. Since most colleges and university campuses have a vast amount of outdoor space, cigarette waste can be easily found around campus (Sawdey, Lindsay, & Novotny, 2011). High amounts of cigarette litter imply that tobacco use is a problem on these campuses and the smoking policy compliance is poor. To lower smoking rates on college campuses, several national organizations recommend that colleges and universities implement and enforce stronger tobacco control and prevention policies (Borders, Xu, Bacchi, Cohen, & SoRelle-Miner, 2005). Consequently, the ACHA and American Cancer Society (ACS) advocate that colleges and universities adopt a no-tobacco use policy and implement “100% indoor and outdoor campus-wide tobacco-free environments” (2012). According to the HHS, policies that create smoke-free environments are considered a “high impact public health interventions” (Niles & Barbour, 2011, p. 53). Colleges and universities present an important venue of developing stronger tobacco-free policies to help reduce the tobacco usage rate in the state and attain the Healthy People 2020 goal of 12% national adult smoking rate (Mamudu, Veeranki, He, Dadkar, & Boone, 2012). Further, the Healthy Campus 2020 target is to bring the smoking rate of students down from 16% to 14% (American College Health Association, 2012). One strategy to achieve the Healthy People 2020 goals is using policy intervention.

Currently CSUN has a 25-foot no-smoking policy from entrances, exits, operable windows and ground level intake structures. Smoking is prohibited within stadium seating areas, tennis courts, other recreational facilities, and outdoor dining areas posted as smoke-free (California State University Northridge, 2003). However, this policy is not

enforced on campus and the policy can be seen violated throughout the day around the entire campus. At least 1,178 universities and colleges in the United States currently have 100% smoke-free campuses (ANR, 2013). Of these colleges and universities, 793 campuses have a 100% tobacco-free campus policy (ANR, 2013). Further, as of January 1, 2014 all 10 campuses in the University of California system will be 100% tobacco-free (University of California Office of the President, 2012). Compared to other college campuses, CSUN is behind in adopting a comprehensive tobacco-free campus policy.

### **Purpose of the Project**

1. Examine student, staff and faculty knowledge of current CSUN smoking policy
2. Examine student, staff and faculty attitude towards current CSUN smoking policy.
3. Examine student, staff, and faculty exposure to secondhand smoke on the CSUN campus.
4. Examine student, staff, and faculty support of 100% smoke-free and 100% tobacco-free campus policies.
5. Examine student, staff, and faculty tobacco use behavior.

### *Objectives:*

The short term objective of this study is to assess the knowledge, attitudes, and beliefs of the CSUN community (students, staff, and faculty) on the current campus smoking policy. Further, opinions regarding developing a campus wide 100% smoke-free and 100% tobacco-free policy will be measured.

## **Research Hypothesis and Assumptions**

H1: Students who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% smoke-free campus than students who believe the current smoking policy is effective.

A. Staff who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% smoke-free campus than staff who believe the current smoking policy is effective.

B. Faculty who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% smoke-free campus than faculty who believe the current smoking policy is effective.

H2: Students who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% tobacco-free campus than students who believe the current smoking policy is effective.

A. Staff who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% tobacco-free campus than staff who believe the current smoking policy is effective.

B. Faculty who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% tobacco-free campus than faculty who believe the current smoking policy is effective.

H3: Students who use tobacco products (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% smoke-free campus policy than students who do not use tobacco products.

- A. Staff who use tobacco products (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% smoke-free campus policy than students who do not use tobacco products.
- B. Faculty who use tobacco products (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% smoke-free campus policy than faculty who do not use tobacco products.

H4: Students who use tobacco products on campus (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% tobacco-free campus policy than students who do not use tobacco products.

- A. Staff who use tobacco products on campus (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% tobacco-free campus policy than staff who do not use tobacco products.
- B. Faculty who use tobacco products on campus (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% tobacco-free campus policy than faculty who do not use tobacco products.

H5: Students who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% smoke-free campus policy than students who are never exposed to secondhand smoke on campus.

- A. Staff who indicate they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% smoke-free campus policy than staff who are never exposed to second-hand smoke on campus.

B. Faculty who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% smoke-free campus policy than faculty who are never exposed to second-hand smoke on campus.

H6: Students who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% tobacco-free campus policy than students who are never exposed to secondhand smoke on campus.

A. Staff who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% tobacco-free campus policy than staff who are never exposed to secondhand smoke on campus.

B. Faculty who indicate they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% tobacco-free campus policy than faculty who are never exposed to second-hand smoke on campus.

## **Rationale**

It is well established that students who are tobacco users and attend tobacco-free campuses will have to make changes to their tobacco use behavior. These changes may help them reduce and eventually quit their tobacco usage (Fennell, 2012). Research demonstrates that policies restricting tobacco usage results in decreased smoking prevalence rates and decreased exposure to secondhand smoke (Glassman, Reindl, & Whewell, 2011). Colleges and universities have a “unique opportunity to reduce morbidity and mortality, protect the environment, and set new societal norms through

tobacco-free policy implementation” (Glassman, Reindl, & Whewell, 2011, p. 767). One study concluded that the benefits of smoke-free policies on campus include: helping reduce smoking, protecting non-smokers, and improving the cleanliness of the campus (Berg, et al., 2011)

Campuses Organized and United for Good Health (COUGH) is a statewide student-led coalition that represents California public colleges and universities “committed to promoting and establishing a safer and healthier educational environment, through tobacco-free policy and education” (California Youth Advocacy Network [CYAN], 2012). COUGH falls under the organization of the California Youth Advocacy Network (CYAN). CYAN was founded in 1997 in order to provide “meaningful opportunities for youth leadership and involvement in California’s revolutionary tobacco control program” (CYAN, 2012). Due to the increased smoking rates of college students, CYAN started a college-based advocacy program (CYAN, 2012). This program targets higher educational institutions in the state such as colleges and universities (CYAN, 2012). COUGH-Northridge has been a recognized student organization on the CSUN campus since the fall of 2010. The mission of COUGH-Northridge is to promote a safe and healthy environment for students, faculty, staff and the general public on the CSUN campus by reducing the health risks associated with tobacco smoke. Through student leadership, COUGH-Northridge promotes good health and improved quality of life by advocating social norms that support a smoke-free campus. The author conducting this study has been serving as the student president of COUGH-Northridge since the fall 2010 semester. By conducting this research the author hopes that this study will help COUGH-

Northridge carry out its mission statement by having the CSUN campus adopt and implement a smoke-free campus policy.

After the study is completed the author will present the data to the CSUN community. The CSUN community consists of students, faculty, staff and administrators. As of the fall 2012 semester, CSUN has a total of 36,163 undergraduate and graduate students. CSUN also has 824 full-time faculty members and 1,106 part-time faculty members (CSUN Office of Institutional Research , 2012). The CSUN community will be presented with the results of the knowledge, attitudes and beliefs of students, staff and faculty regarding the current smoking policy on campus and support for adopting a more comprehensive tobacco free campus policy. As a result of the collected data and results, the author anticipates this will be sufficient research to work towards a tobacco-free CSUN campus.

### **Thesis Delimitations and Limitations**

The study is delimited to current students, faculty and staff at CSUN. Faculty and staff who were contacted by e-mail to participate electronically in the study were listed as current employees in the CSUN campus directory. The author did not e-mail employees such as faculty that were listed as retired in the campus directory. Students who were asked to participate in the paper version of the survey were registered and enrolled in the course that the author conducted the survey. Thus, being enrolled in the class during the implementation period of the survey ensured that the students in the course were current CSUN students.

The following limitations have been identified by the author:

1. Low internal validity threat: selection of participants. This is due to the fact that the CSUN community (students, faculty, staff and administrators) participants that take part in this survey may have certain characteristics that predispose certain outcomes. Although the sample that participated in the anonymous survey is selected at random, there is still a threat of interval validity.
2. Results of this study are not generalizable throughout all college campus populations. There is a generalizability threat to the research since the study is conducted on the CSUN campus with students, staff and faculty. This population may not be generalizable to other college and university campuses throughout the United States.
3. Self-reported surveys. The surveys are self-reported and there may be some limitations in regards to accurate reporting since under-reporting may occur by the participants. For instance, students, faculty, and staff might under-report various questions pertaining to tobacco usage behavior.
4. Non-participation of participants. Due to the content of the survey instrument, there may be a high number of non-participation by tobacco users. These randomly selected participants may not want to share their tobacco use behavior, or their level of support for more comprehensive tobacco-free campus policies.
5. Time constraints of the study do not allow for the analysis of longitudinal data.
6. Observer effect. The survey instrument used in this research is associated with COUGH-Northridge and the author is affiliated with COUGH-Northridge. As a result, participants may improve or modify an aspect of their behavior which they know is being studied as part of this research.

## **Definition of Terms**

100% Smoke-free policy: Smoking is prohibited on campus property including parking lots (ANR, 2013).

100% Tobacco-free policy: Policy that prohibits the use to all tobacco products including smoke-emanating and smokeless tobacco products (ANR, 2013).

Cigarettes: is any roll of tobacco wrapped in paper or any substance. It is the most widely used tobacco product in the United States (HHS, 2013).

Designated parking lots: No smoking on campus with the exception of designated parking lots (ANR, 2013).

Designated smoking areas: Smoking prohibited on campus with the exception of designated smoking areas (ANR, 2013).

Designated smoke-free areas: Smoking is permitted on campus with the exception of designated smoke-free areas (ANR, 2013).

Electronic Cigarettes: Also referred to as “e-cigarettes”. Are battery operated products designed to turn nicotine and other chemicals into a vapor. These products are often made to resemble: cigarettes, cigars, pipes, and pens (HHS, 2012)

Environmental smoke: “Smoke that comes from the burning of a tobacco product and smoke that is exhaled by smokers. Inhaling environmental tobacco smoke is called involuntary or passive smoking”. Also referred to as ETS (Environmental Tobacco Smoke) and secondhand smoke. (National Cancer Institute, 2013)

Healthy People 2020: “Provides science-based, 10-year national objectives for improving the health of all Americans”. Establishes benchmarks and monitors progress throughout the years in order to: “encourage collaborations across communities and sectors;

empower individuals toward making informed health decisions; measure the impact of prevention activities” (HHS, 2012, b).

Healthy Campus 2020: Often referred to as the “sister document” to the Healthy People. Conducted by ACHA’s Healthy Campus Coalition. “Is a result of a multiyear process that reflects the thoughts and perspectives of 600+ diverse higher education professionals representing multiple professional organizations and disciplines” (American College Health Association, 2012)

Hookah: Also referred to as water pipes. Used to smoke specially made tobacco that is available in a variety of flavors. A typical modern hookah has a head (with holes in the bottom), a metal body, a water bowl, and a flexible hose with a mouthpiece. Tobacco smoke is drawn through water or ice in the water bowl and cooled before it is inhaled (HHS, 2013).

Secondhand smoke: is a mixture of gases and fine particles. It includes smoke from a burning cigarette, cigar, or pipe tip; smoke that has been exhaled or breathed out by the person or people smoking. Also referred to as ETS, involuntary smoke, or passive smoke (CDC, 2006).

Smoke-free perimeters: Smoking is prohibited in campus owned buildings and within X-ft; such as 20 feet, 25 feet, etc. (ANR, 2013).

Smokeless tobacco: is tobacco that is not burned. It comes in various forms such as: chewing tobacco (placed between the cheek and gums); Snuff (can be sniffed if dried); Dip (moist snuff which is used like chewing tobacco); Snus (a small pouch of moist snuff); Dissolvable products (including lozenges, orbs, sticks, and strips) (HHS, 2013).

Master Settlement Agreement, 1998: Between 46 States including California and the four largest tobacco companies in the United States. Many tobacco policies were changed throughout the states. Much of the advertising that was aimed at youth and young adults were stopped as a result of the settlement (HHS, 2012).

Thirdhand smoke: “consists of the tobacco residue from cigarettes, cigars, or other tobacco products that is left behind after smoking and builds up on surfaces and furnishings” (ANR, 2013).

## **Summary**

Even though the health risks and negative health outcomes has become evident, cigarette smoking is still common in young adults in the United States. Young adults ages 18 to 24 have the highest rate of tobacco use compared to all other age groups (Rodgers, 2012). College campuses are associated with places of leadership, learning, enlightenment and change. It has been recommended that colleges and universities enforce more comprehensive tobacco control and prevention policies in order to successfully lower the smoking rate. Currently, CSUN has a 25-foot no-smoking policy from entrances, exits, operable windows and ground level intake structures. However, this policy is not enforced and compared to other college campuses CSUN is behind in adopting a comprehensive tobacco-free campus policy. The purpose of this study is to examine students, staff, and faculty support of 100% smoke-free and 100% tobacco-free policies; examine student, staff, and faculty, attitudes towards current CSUN smoking policy; and lastly examine student, staff, and faculty preferences regarding future tobacco-free policies on campus. Chapter 2 will present a literature review that examines the health effects associated with smoking, secondhand and thirdhand smoke, smoking

related statistics, cigarette waste and the environment, cigarette usage by college students, public health interventions for college students, existing tobacco control laws in California, and smoke-free and tobacco-free campus policies.

## **CHAPTER 2: LITERATURE REVIEW**

This chapter contains a comprehensive literature review. It will examine the health effects associated with smoking and the dangers of secondhand and thirdhand smoke. Next, smoking-related statistics will be mentioned. Effects of cigarette waste and the environment will be discussed in detail. Further, the population of college students who smoke will be explained and public health interventions towards this population will be looked into further. Existing policies regarding smoking that are current laws in California will be discussed. Lastly, smoke-free and tobacco-free campus policies will be examined.

### **Health Effects Associated with Smoking**

Smoking harms every organ in the human body. Scientific evidence and research has concluded that smoking is associated with a vast array of health consequences which include different diseases and cancer. Tobacco use remains the leading cause of preventable death and disease in the United States. In a 1994 Surgeon General Report, it was concluded that smoking has “immediate and long-term health consequences for young people” (CDC, 2006). Research has shown that tobacco use among youth and young adults causes immediate and long-term health damages. It is proven that the younger a person is when they start using tobacco, the “more serious the health effects of nicotine addiction” (CDC, 2006). Reports have shown that on average, smokers die 13 to 14 years earlier than nonsmokers (CDC, 2006). Younger smokers increase their chances of reduced lung function, reduced lung growth, developing asthma, and early abdominal

aortic atherosclerosis (HHS, 2012). Next, it is established that there are “serious social, physical, and mental health problems that manifest during adolescence and young adulthood” which are a major factor for various long-term diseases (HHS, 2012). Lastly, smoking has been linked as the “chief preventable cause of premature death” in the United States and the “early stages of the diseases associated with adult smoking are already evident among young smokers” (HHS, 2012).

Smoking cigarettes causes a reduction in circulation since the blood vessels become narrower after time (CDC, 2006). It has been shown that smoking increases the risk of coronary heart disease and stroke two to four times in comparison to a non-smoker (CDC, 2006). Smokers are more likely to die from chronic obstructive lung diseases such as chronic bronchitis and emphysema (CDC, 2006). Additionally, smoking is linked to coronary heart disease, which is the leading cause of death in the United States (CDC, 2006). Smokers are two to four times more likely to suffer a heart attack than nonsmokers (CDC, 2006). The risk of having a heart attack is increased with the number of cigarettes a person smokes (CDC, 2006). It has been proven that smoking causes lung cancer and other lung diseases. Consequently, smoking is the cause of the following cancers: acute myeloid leukemia, bladder, cervix, kidney, larynx, lung, oral cavity, pancreatic, pharynx and stomach (CDC, 2006).

### **Lung Cancer**

Lung cancer is the leading cause of cancer death among both men and women in the United States (CDC, 2006). It has been shown that lung cancer surpasses breast cancer as the number one cause of death among women (CDC, 2013). Studies have shown that the top risk factor for developing lung cancer is as a result of smoking

cigarettes. Currently, 90% of lung cancer diagnoses in the United States are directly a result of smoking cigarettes (CDC, 2013). Individuals who smoke are 15 to 30 times more likely to develop lung cancer or die as a result of lung cancer as compared to people who do not smoke cigarettes (CDC, 2013). It has been determined that smoking only a few cigarettes a day or occasional smoking increases an individual's risk of lung cancer (CDC, 2013). Consequently, the longer a person smokes cigarettes the greater their risk for developing lung cancer (CDC, 2013). Individuals who quit smoking cigarettes lower their risk of developing lung cancer although their risk of being diagnosed is higher than a non-smoker (CDC, 2013).

Further, the U.S. Surgeon General has estimated that a non-smoker who lives with a smoker increases their chances of developing lung cancer by 20 to 30 percent (CDC, 2006). Each year there are approximately 3,000 non-smokers who die as result of lung cancer (CDC, 2006). Research has shown that cancer survivors who have had radiation therapy to the chest have a higher risk of developing lung cancer (CDC, 2013). Those who have been treated for Hodgkin's disease and women treated by radiation for breast cancer after a mastectomy are at higher risk of developing lung cancer (CDC, 2013).

Various exposures in the home and workplace may also cause lung cancer. Radon which is a "naturally occurring gas that comes from rocks and dirt" can easily get trapped in houses and buildings (U.S. Environmental Protection Agency [EPA], 2013). According to the Environmental Protection Agency (EPA) radon causes about 20,000 newly diagnosed cases of lung cancer each year (2013). It has been indicated that one out of every fifteen homes in the United States has high radon levels (EPA, 2013). Substances such as asbestos, arsenic, diesel exhaust, and some forms of silica and chromium in the

workplace increases the risk of getting lung cancer (EPA, 2013). The chances of developing lung cancer are higher in individuals who are in these environments and also smoke cigarettes (CDC, 2013). Lastly, the risk of lung cancer may be higher if there is a family history (such as parents or siblings) of being diagnosed with lung cancer (CDC, 2013).

### **Secondhand and Thirdhand Tobacco Smoke**

Every year, 88 million non-smokers are exposed to secondhand and thirdhand tobacco smoke (HHS, 2012). Secondhand smoke is a mixture of gases and particles (CDC, 2006). Secondhand smoke includes smoke from a burning cigarette, cigar, or pipe smoke that has been exhaled or breathed out by the person or people smoking (CDC, 2006). The Surgeon General of the U.S. has reported that there is no “risk-free level of exposure to secondhand tobacco smoke, ventilation cannot eliminate exposure of nonsmokers to secondhand smoke, and establishing smoke-free environments are the only proven way to prevent exposure” (CDC, 2006). The EPA has found that secondhand tobacco smoke is a “risk to public health” and has classified it as a group A carcinogen, the most dangerous type of carcinogen (1992).

More than 7,000 chemicals have been found in secondhand smoke in which more than 250 of them have been found to be dangerous (CDC, 2006) These dangerous chemicals include carbon monoxide, ammonia, and hydrogen cyanide (CDC, 2006). There are at least 69 chemicals in secondhand smoke that are known to cause cancer (CDC, 2006). Some of these cancer causing chemicals include arsenic, benzene, beryllium formaldehyde, cadmium, and ethylene oxide (CDC, 2006). It has been shown that various factors play a role in which chemicals are found in secondhand smoke. These

factors include “the type of tobacco, the chemicals added to the tobacco, the way the tobacco product is smoked, and for cigarettes or cigars, the material in which the tobacco is wrapped” (CDC, 2006).

In the United States, the source of most secondhand smoke is from cigarettes, followed by pipes (such as hookah), cigars and other smoke producing tobacco products (HHS, 2006). The amount of smoke that is produced by a tobacco product depends on the amount of tobacco that is available to be burned such as in the cigarette or cigar (HHS, 2006). For instance, the amount of secondhand smoke produced by smoking one large cigar containing tobacco is similar to the secondhand smoke produced by smoking an entire package of cigarettes (HHS, 2006). Some places that expose people to secondhand smoke include homes, cars, the workplace and various public places (CDC, 2006).

A clear association has been made with disease and premature death in non-smoking adults and children exposed to secondhand smoke. As previously mentioned, secondhand smoke is responsible for 3,000 cases of lung cancer deaths in non-smokers each year in the United States (CDC, 2006). Research has shown that a nonsmoker increases their chances of developing cancer by 20 to 30 percent when they live with a smoker (HHS, 2006). It has been established that exposure to secondhand smoke irritates the airways and has immediate harmful effects on a person’s heart and blood vessels (HHS, 2006). In nonsmoking adults, heart disease is increased by an estimated 25 to 30 percent with frequent exposure of secondhand smoke (HHS, 2006). Children who are exposed to secondhand smoke are at a higher risk of sudden infant death syndrome, ear infections, colds, pneumonia, bronchitis, and severe asthma (HHS, 2006). When children are exposed to secondhand smoke it slows down the growth of their lungs and can cause

them to cough, wheeze, and feel breathless (HHS, 2006). In the United States, secondhand smoke exposure is responsible for 150,000-300,000 new cases of bronchitis and pneumonia annually in children 18 months and younger (HHS, 2012). Furthermore, there are approximately 7,500-15,000 hospitalizations annually for children as a result of secondhand smoke exposure (HHS, 2012). Research suggests that secondhand smoke “may increase the risk of breast cancer, nasal sinus cavity cancer and nasopharyngeal cancer in adults; and the risk of leukemia, lymphoma and brain tumors in children” (HHS, 2006).

Thirdhand smoke consists of “tobacco residue from cigarettes, cigars, and other tobacco products that is left behind after smoking and builds up on surfaces and furnishings” (ANR, 2013). This is a newer term that is used to describe the residual contamination from tobacco smoke “that lingers in rooms long after smoking stops” and remains on places such as clothing, hair and the car (ANR, 2013). Many people consider the smell to be very unpleasant and thus, the smell is associated with the presence of tobacco toxins (ANR, 2013). Parents who are smokers put their children at risk of thirdhand smoke exposure every day due to the tobacco residue found inside the home and in their cars (ANR, 2013). In a research study conducted on thirdhand smoke it was shown that there are health risks associated with the tobacco residue (Sleiman, et al., 2010). Further, the tobacco toxins “remain harmful even when breathed or ingested after active smoking ends” (Sleiman, et al., 2010, p. 1).

### **Smoking-Related Statistics**

Each year smoking related illnesses kills approximately 443,000 Americans (HHS, 2012). Currently, there are 8.6 million Americans living with a serious illness

caused by tobacco use (HHS, 2012). In 2011, the smoking rate for 18-24 year-olds in California was 14.6% (California Tobacco Control Program, 2012). It has been shown that 64% of smokers start by the age of 18 in California while 96% of smokers start by the age of 26 (California Tobacco Control Program, 2012). In the National Health Interview Survey (NHIS) for 2004-2010 it was found that cigarette smoking prevalence among adults in the United States is approximately 43.8 million people or 19.6% of the population (CDC, 2011). Men have a higher smoking rate in comparison to women in the United States. Data shows 21.6% of men and 16.55% of women are current smokers (CDC, 2011). Smoking prevalence among adults was found to be highest among adults with less than a high school education (28.4%), those with no health insurance (28.6%), those living below the federal poverty level (27.7%) and those aged 18-24 years (23.8%) (CDC, 2011).

From 2005 to 2011 the total number of adult smokers in the United States declined from 20.90% to 19.6% (HHS, 2012). This decline shows that progress is slowly being made in the adult population. However, every day more than 3,600 people under the age of 18 smoke their first cigarette and more than 900 begin smoking on a daily basis (HHS, 2012). Data shows that approximately 18% of high school students smoke cigarettes (HHS, 2012). It was also reported that 7.7% of high school students reported using smokeless tobacco such as chewing tobacco, snuff, and or dip tobacco (HHS, 2012).

Annually, the economic burden of cigarette use is \$96 billion in direct medical expenses and \$97 billion in lost productivity in the United States (CDC, 2011). It is estimated that in 2012, \$6.5 billion dollars of tax payer money in California was spent on

adult tobacco related health care costs (California Tobacco Control Program, 2012). It has been documented that secondhand smoke costs are more than \$10 billion dollars annually in health care expenditures, morbidity, and mortality in the U.S (CDC, 2011). As previously mentioned, smoking cigarettes causes a variety of cancers and health conditions. Lung cancer accounts for the highest amount of deaths with a total of approximately 128,900 each year (CDC, 2011). Next, ischemic heart disease causes 126,000 deaths a year as a result of smoking cigarettes (CDC, 2011). Chronic obstructive pulmonary disease accounts for approximately 92,900 deaths in the U.S. Other diagnosis caused by smoking cigarettes causes approximately 44,000 deaths while other cancers (acute myeloid leukemia, bladder, cervix, kidney, larynx, oral cavity, pancreatic, pharynx and stomach) accounts for 35,300 deaths in the U.S (CDC, 2011). Lastly, deaths caused by strokes accounts for approximately 15,900 deaths a year as a result of cigarette use (CDC, 2011).

### **Cigarette Waste and the Environment**

The litter caused by cigarette waste also referred to as cigarette butts, has a negative impact on the environment. Cigarette waste consists of the filter of the cigarette which is the top portion of the cigarette. Cigarette waste is the most common form of litter worldwide and is considered a toxic waste in the environment (Novotny, Lum, Smith, Wang, & Barnes, 2009). Cigarette butts have been classified as a toxic waste because of the “environmental leachates such as nicotine and ethylphenol and the non-biodegradable cellulose acetate used to make cigarette filters” (Novotny, 2009, p. 1692). Cigarette butts are frequently tossed on the ground in public places and are a large source of litter (Novotny, 2009). Most of the cigarette butts make its way to storm drains and

eventually ends up in the ocean (Novotny, 2009). When beach clean ups are done throughout the world, cigarette butts are among the top wastes collected (Novotny, 2009).

Cigarette fitters are marketed by tobacco companies as a protective health device for cigarettes and are a major marketing tool in order to sell “safer” cigarettes (Novotny, 2009). However, the filter contains non-biodegradable cellulose acetate which does not break down (Sawdey, Lindsay, & Novotny, 2011). Thus, these non-biodegradable filters create a negative impact on the environment. Cigarette butts are not only toxic to the environment but also harmful if ingested by animals or humans (Novotny et al., 2011). Young children and pets are at a higher risk of ingesting cigarette butts found on the ground (Novotny et al., 2011). Animals such as birds, sea creatures and animals that are indiscriminate eaters are also at risk for ingesting cigarette butts (Novotny et al., 2011). Young children and animals can choke on cigarette butts making it very dangerous. Also, the toxicity of cigarette butts can cause many negative health effects if swallowed (Novotny et al., 2011). Aside from choking on a cigarette butt, children are at risk of suffering from poisoning, nausea, vomiting, convulsions, cardiac arrhythmias, and respiratory depression (Novotny et al., 2011).

Cigarette waste litter has become apparent throughout colleges and universities in the United States. Since most colleges and university campuses have a vast amount of outdoor space, cigarette waste can be easily found (Sawdey, Lindsay, & Novotny, 2011). Two separate campus-wide clean-ups in San Diego State University (SDSU) and University of California San Diego (UCSD) were conducted in order to estimate the amount of cigarette butts that are found at a large university campus. In one hour, 63 volunteers at SDSU collected a total of 23,885 cigarette butts (Sawdey, Lindsay, &

Novotny, 2011). At UCSD, 17 volunteers collected a total of 6,525 cigarette butts in one hour (Sawdey, Lindsay, & Novotny, 2011). Given the amount of cigarette butts that were collected in a one hour period at both of these universities shows that the amount of cigarette litter found on campuses is substantial (Sawdey, Lindsay, & Novotny, 2011). Further, the amount of cigarette litter also increases the clean-up costs of the facilities at universities and colleges (Sawdey, Lindsay, & Novotny, 2011). More work and increased costs will have to be paid by universities and colleges in order to clean-up cigarette butt litter (Sawdey, Lindsay, & Novotny, 2011). One of the major solutions in order to effectively decrease the amount of cigarette litter that is found on campuses is implementing and enforcing smoke-free campus policies. Tobacco use policies such as 100% smoke-free and 100% tobacco-free campus policies can have a major impact on reducing the amount of litter from cigarette butts found on the campus (Sawdey, Lindsay, & Novotny, 2011).

### **College Students and Smoking**

Throughout the years it has been shown that the tobacco industry targets college students with marketing and special promotions centered in bars close to college campuses (Seo, Macy, Torabi, & Middlestadt, 2011). The Master Settlement Agreement in 1998 took place between 46 States including California and the four largest tobacco companies in the United States. Many tobacco policies were changed throughout the states. Much of the advertising that was aimed at youth and young adults were stopped as a result of the settlement (HHS, 2012). After the Master Settlement agreement in 1998, the tobacco industry started targeting young adults as their earliest legal demographic (Baille, Callaghan, & Smith, 2011). Analysis of tobacco industry documents has

revealed that college students are targeted not only through bar promotions but at different music sponsorships, sporting events and various parties (Loukas, Garcia, & Gottlieb, 2006). It has also been noted that college students are a “unique population because many of them are in relatively early stages of smoking, and they are situated in educational intuitions which are expected to cultivate reasoning ability and socially acceptable behaviors” (Chuang & Hung-Song-Lih, 2011, p. 200). College students are also in a time in their lives where they are transitioning from adolescence and young adulthood thus “during this time, they make many lifestyle and behavior decisions, including the decision to use tobacco or not” (Loukas, Garcia, & Gottlieb, 2006, p. 27). According to Niles & Barbour, the four most common reasons that college students gave for their smoking behavior in college was because of stress, less supervision, having more free time, and the number of their friends who smoke (2011).

The transition to college is an important stage in a young adult’s life. It represents freedom to make their own choices and it may lead to the decision to start engaging in risky behaviors such as smoking. Factors like stress, mood, peer-pressure and emotional coping can increase a students’ likelihood to initiate in smoking behavior. The majority of adults who smoke started using tobacco before the age of 18, however a significant number of young adults start to use tobacco after entering college (Rodgers, 2012). Students that have never smoked may start experimenting with cigarettes and students who smoke before starting college may become more frequent and heavier smokers (Patterson, Lerman, Kaufmann, Neuner, & Audrain-McGovern, 2004). Further, it has been shown that this late initiation “may occur because students are more likely to experiment with tobacco once they get to college, despite previously abstaining from

tobacco use during adolescence” (Rodgers, 2012, p. 257). Students may also experience peer pressure from their friends who use tobacco more frequently in college after experimenting with tobacco in high school (Rodgers, 2012). Consequently, a high rate of tobacco usage among young adults in college has the potential to “significantly impact future smoking rates in the general population” (Rodgers, 2012, p. 257).

### **Public Health Interventions for College Students**

In contrast with the marketing efforts that the tobacco companies aim at this age group, the tobacco control and prevention efforts are minimal. It has been shown that prevention efforts to reduce tobacco use among young adults have not been as abundant in comparison to youth prevention in the United States (Loukas, Garcia, & Gottlieb, 2006). Each year the tobacco companies spend billions of dollars on advertising and promoting their products. In 2011, a total of \$8.37 billion dollars was spent on advertising and promotion of tobacco products (CDC, 2011). Further, it is estimated that the tobacco companies spent approximately \$23 million dollars every day on advertising and promoting their tobacco products (CDC, 2011).

It is evident that tobacco control spending in the United States does not compare to the amount the tobacco companies spend on advertising and promotion. According to the CDC, tobacco control spending in the United States does not meet the recommended levels that have been set by the CDC for each of the states (CDC, 2011). States have tobacco excise taxes and tobacco industry settlements like the Master Settlement Agreement available to use to strengthen their tobacco control programs (CDC, 2011). Currently, a very small percentage of these funds are being used in each state for tobacco control programs in order to prevent and control tobacco use (CDC, 2011). In 2013, it is

estimated that \$25.7 billion dollars will be collected among all the states from tobacco taxes and legal settlements (CDC, 2011). However, it is estimated that states will only spend 1.8% of the \$25.7 billion on prevention and cessation programs (CDC, 2011).

In order to prevent the increasing trend among college students and smoking, a major public health intervention in the form of policy implementation has been recognized. Public health promoters have “put forth a deal of effort to prevent smoking among young individuals” in comparison to “preventing and decreasing cigarette use among college students” (Loukas, Garcia, & Gottlieb, 2006, p. 27). Several national organizations, including the CDC and HHS, recommend that colleges and universities implement and enforce stronger tobacco control and prevention policies (Borders, Xu, Bacchi, Cohen, & SoRelle-Miner, 2005). These recommendations include comprehensive smoke-free and tobacco-free campus policies. A 100% smoke-free policy prohibits smoking tobacco products in all indoor and outdoor campus property including parking lots (ANR, 2013). A 100% tobacco-free policy prohibits the use to all tobacco products including smoke-emanating and smokeless products (ANR, 2013). With a 100% tobacco-free policy all tobacco products are prohibited from use. This policy covers cigarettes, pipes, cigars, and smokeless tobacco products (ANR, 2013). According to the HHS, using policies such as smoke-free environments are considered a “high impact public health intervention” (HHS, 2012). Throughout the years there have been many positive correlations regarding smoke-free policies in the workplace as an effective way to help workers quit smoking (Bauer, Hyland, Li, Steger, & Cummings, 2005).

## **Existing Tobacco Control Policies in California and Universities in California**

In California, there are existing laws regarding tobacco control and smoking policies. On February 19, 1993, Executive Order W-42-93 was signed by Governor, Pete Wilson and banned smoking in state-owned buildings and leased spaces (W-42-93, 1993). Following this order, the Governor signed Assembly Bill (AB) 291 on October 11, 1993 which extended the smoking prohibition to include all state-owned vehicles and mobile equipment (ASB 291, 1993). On September 8, 2003, Governor Arnold Schwarzenegger signed AB 846, which extended the outdoor restriction and prohibits smoking inside public buildings as defined, and within 20 feet of a main exit, entrance, or operable window of a public building (ASB 846, 2003). This bill also provided that these provisions would not preempt the authority of any county, and or city (ASB 846, 2003). Under AB 846, California Community College campuses, campuses of the California State University, and campuses of the University of California are granted the authority to adopt and enforce smoke and tobacco-free policies that are more restrictive than the standards required by this bill (ASB 846, 2003). In 2011, Governor, Jerry Brown signed into law AB 795 which gives the governing bodies of the University of California, California State University and each community college district the authority to enforce their smoke and tobacco-free policies by citation and fine, as specified (ASB 795, 2011). The bill provides that if a campus adopts the enforcement and fine authority then it may post signs stating its tobacco use policy and inform employees and students of the policy as specified (ASB 846, 2003).

## **Smoke-free and Tobacco-free Policies**

Despite the reductions of the smoking rate in the United States, tobacco use still remains a high public health concern especially among college students. To lower the rate of tobacco use among young adults, several national organizations have recommended that colleges and universities adopt stronger tobacco control and prevention policies on campus. The ACHA and ACS advocate that colleges and universities adopt a no-tobacco use policy and implement “100% indoor and outdoor campus-wide tobacco-free environments” (2012). According to the HHS, policies that create smoke-free environments are considered a “high impact public health interventions” (Niles & Barbour, 2011, p. 53). Colleges and universities present an important venue of developing stronger tobacco-free policies to help reduce the tobacco usage rate in the United States (Mamudu, Veeranki, He, Dadkar, & Boone, 2012).

The literature and studies done throughout the past several years show that smoke-free policies lower the prevalence of smoking (Niles & Barbour, 2011). Since most of the pro-tobacco marketing attempts to “normalize smoking particularly in young adults, smoke-free policies make smoking less socially acceptable” (Berg et al., 2011, p. 106). In a multiple analysis of 26 studies examining the effects of smoke-free workplaces in four different countries including the United States, it was shown that “smoking prevalence and consumption is reduced in these settings” (Plaspohl, Parrillo, Vogel, Tedders, & Epstein, 2011, p. 163). Research done on smoke-free restaurants and bars has shown that these businesses have not been negatively impacted by these bans (Berg et al., 2011). Smoke-free work places have been shown to decrease the prevalence rate of smoking by 3.8% and to lower the consumption of cigarettes smoked (Lee et al., 2010).

Lee et al., believes that if “this level of impact applies to college students, it suggests that the potential impacts may be substantial and will also benefit the health of campus employees” (2010, p. 316).

The two most effective policies a college can adopt are 100% smoke-free and 100% tobacco-free. A 100% smoke-free policy prohibits smoking in all indoor and outdoor locations on college campuses including parking lots (ANR, 2013). A more comprehensive policy is a 100% tobacco-free campus policy, which prohibits the use of all tobacco products including smoke-emanating and smokeless tobacco products (ANR, 2013). At least 1,178 universities and colleges in the United States currently have 100% smoke-free campuses (ANR, 2013). Among these colleges and universities, 793 campuses have a 100% tobacco-free campus policy (ANR, 2013). Since college years have been characterized as a period of transition, an increased risk of starting to smoke has become apparent within this population (Chuang & Hung-Song-Lih, 2011). The literature demonstrates that the use of policy intervention is “effective in promoting healthy outcomes” (Plaspohl, Parrillo, Vogel, Tedders, & Epstein, 2011, p. 162). It is known that implementation of these policies significantly changes behaviors among students who currently smoke. One study concluded that the benefits of smoke-free policies on campus include: helping reduce smoking, protecting non-smokers, and improving the cleanliness of the campus (Berg, et al., 2011).

Consequently, it has been revealed that smoke-free campus policies decrease the current smoking prevalence in students and decreases the amount of cigarettes used by those who smoke (Seo, Macy, Torabi, & Middlestadt, 2011) (Chuang & Hung-Song-Lih, 2011). Smoke-free campus policies positively influence students’ perceptions of peer

smoking while changing social norms of tobacco usage (Seo, Macy, Torabi, & Middlestadt, 2011). Further, smoke-free campus policies also increase favorable attitudes towards the regulation of tobacco (Seo, Macy, Torabi, & Middlestadt, 2011). In another study it was shown that “smoke-free campus policies are effective at reducing cigarette consumption on campus and promote broad normative changes” (Lee, et al., 2010, p. 311). Most importantly strong tobacco use policies on college campuses decrease the health disparities associated with tobacco use and promote student success.

### **Summary**

It is evident that smoking harms every organ in the human body. Tobacco use remains the largest preventable cause of death and disease in the United States Each year smoking related illnesses kill approximately 443,000 Americans (HHS, 2012). Currently, there are 8.6 million Americans living with a serious illness caused by smoking (HHS, 2012). Smoking cigarettes puts a person at risk of developing lung cancer which is the leading cause of cancer death among both men and women in the United States (CDC, 2006). Every year 88 million non-smokers are exposed to secondhand and thirdhand smoke (HHS, 2012). The U.S. Surgeon General has estimated that a non-smoker who lives with a smoker increases their chances of developing lung cancer by 20 to 30 percent (CDC, 2006). The EPA has found that secondhand tobacco smoke is a “risk to public health” and has classified it as a group A carcinogen, the most dangerous type of carcinogen (1992). Further, cigarette waste is the most common form of litter worldwide and is considered a toxic waste in the environment (Novotny et al., 2009). The non-biodegradable filters used in cigarettes create a negative impact on the environment.

Cigarette butts are not only toxic to the environment but also harmful if ingested by animals or humans (Novotny et al., 2011).

Throughout the years it has been shown that the tobacco industry targets primarily college students with marketing and special promotions centered in bars close to college campuses (Seo, Macy, Torabi, & Middlestadt, 2011). In contrast with the marketing efforts that the tobacco companies aim at this age group, the prevention and tobacco control efforts are minimal. Thus, in order to prevent the increasing trend among college students and smoking, a major public health intervention in the form of policy implementation has been recognized. Consequently it has been shown that smoke-free campus policies decrease the current smoking prevalence in students and decreases the amount of cigarettes used by those who smoke (Seo, Macy, Torabi, & Middlestadt, 2011) (Chuang & Hung-Song-Lih, 2011). Smoke and tobacco-free campus policies positively influence students' perceptions of peer smoking while changing social norms of tobacco usage (Seo, Macy, Torabi, & Middlestadt, 2011). The next chapter will cover the methodology section of the research project. Sections including organization of the project, study population, development of the data collection instrument, the research instrument, theory of research instrument, and data analysis method will be discussed in detail.

## **CHAPTER 3: METHODOLOGY**

This chapter contains the methods of the study. The organization of the project will be discussed. The study design and research instrument used in this study will be explained. A comprehensive background of the study population of the CSUN community will be discussed including smoking prevalence rates among students attending CSUN. Next, the implementation methods of how the study was conducted will be mentioned in detail. Further, the data analysis method of the study will be explained.

### **Organization of the Project**

The initial steps towards the design of this project began in the summer 2010 semester when the author pilot tested the first version of the survey instrument. In the fall 2012 semester the author selected a Graduate Thesis committee, which based on CSUN criteria must consist of at least two internal full-time faculty members. Additionally, one outside committee member, the project director of CYAN was selected for her expertise in tobacco control and policy in colleges and universities in California. The pilot test and research study were conducted as a result of the author's role in COUGH-Northridge. As previously mentioned COUGH-Northridge's mission is to promote good health and improved quality of life by advocating social norms that support a smoke-free campus. In order to successfully adopt and implement a smoke-free campus policy, COUGH-Northridge believes that collecting data through a survey instrument will tremendously support its mission and goals. A thesis proposal was submitted to the author's Graduate Thesis committee and was approved in January 2013. An existing Human Subjects Protocol was already on file with the Institutional Review Board at CSUN from 2010.

Modifications were made to the instrument and approved by the Institutional Review Board on February 27, 2013. The approved Human Subjects Protocol can be found in Appendix A.

### **Study Population**

The demographics of CSUN consist of students, faculty, staff and administrators. CSUN is a large diverse university campus that is made up of a large student population. For the focus of this research the author has selected to survey students, faculty, and staff on the CSUN campus. In the fall 2012 term, the CSUN campus consisted of a total enrollment of 36,164 students (CSUN Institutional Research, 2012). There were 20,182 (55.80%) female student and 15,982 (55.80%) male students (CSUN Office of Institutional Research, 2012). The average age for students was 23.9 (CSUN Institutional Research, 2012). A total of 1,744 staff and 1,829 faculty were reported on the CSUN campus for the fall 2012 term (CSUN Institutional Research, 2012). There were 80.30% staff who were classified as full time and 19.7% were classified as part-time (CSUN Institutional Research, 2012). A total of 46.0% of faculty were classified as full-time and 54.0% were classified as part-time on the CSUN campus (CSUN Office of Institutional Research, 2012). Table 1 on the next page illustrates a comprehensive description of the demographics of CSUN students. Table 2, also shown on the next page, contains the demographics of the staff population at CSUN. On page 36, the demographics of the CSUN faculty population is illustrated in Table 3. Table 4 and Table 5 on page 36 illustrate the rates of tobacco usage by CSUN students who were randomly selected to participate in the 2013 National College Health Assessment by the American College Health Association (ACHA).

Table 1: CSUN Student Population (CSUN Institutional Research, 2012)

Gender	Men: 15,982 or 44.20% Women 20,182 or 55.80%
Average Age	Undergraduate: 22.7 Graduate: 31.4 All students: 23.9
Class level	Undergraduate: 22.70% Graduate: 31.40% All students: 23.90%
Ethnicity	Asian/Pacific Islander: 4,100 or 11.40% Black/African American: 2,224 or 6.1% Caucasian/White: 10,562 or 29.2% Latino/Hispanic: 12,769 or 35.30% Other: 3,859 or 10.7%
Undergraduate Students	Men: 14,096 or 44.20% Women:17,023 or 54.70%
Full-Time (n=25,460)	Men: 11,398 or 44.80% Women: 14,062 or 55.20%
Part-Time (n= 5,659)	Men:2,698 or 47.70% Women: 2,961 or 52.3%
Graduate Students	Men: 1,886 or 37.4% Women: 3,159 or 62.6%
Full-Time (n=2,490)	Men:845 or 33.90% Women: 1,645 or 66.10%
Part-Time (n=2,555)	Men: 1,041 or 40.7% Women: 1,514 or 59.30%

Table 2: CSUN Staff Population (CSUN Institutional Research, 2012)

Full-Time Staff	1,424 or 80.30%
Part-Time Staff	350 or 19.7%
Total Staff	1,774

Table 3: CSUN Faculty Population (CSUN Institutional Research, 2012)

Full time faculty	842 or 46.0%
Part-Time faculty	987 or 54.0%
Total faculty	1,829
Full-Time Faculty Ethnicity	African American: 48 or 5.7% American Indian: 5 or 0.6% Asian American: 124 or 14.7% Latino: 93 or 11.0% White, Non-Latino: 549 or 65.2% Other: 23 or 2.7%
Full-Time faculty by rank	Professor: 392 or 46.60% Associate Professor: 204 or 24.20% Assistant Professor: 194 or 23.0% Instructor/other: 52 or 6.2%

Table 4: Cigarette Usage by CSUN Students (American College Health Association, 2013)

	Females	Males
Never used	75.3%	64.5%
Used, but not in the last 30 days	15.9%	20.7%
Used 1-9 days	5.2%	8.4%
Used 10-29 days	1.2%	2.2%
Used all 30 days	2.4%	4.2%
Any use within the last 30 days	8.9%	14.8%

Table 5: Tobacco from a Water Pipe (Hookah) Usage by CSUN Students (American College Health Association, 2013)

	Females	Males
Never used	68.8%	62.2%
Used, but not in the last 30 days	20.8%	24.5%
Used 1-9 days	8.9%	11.0%
Used 10-29 days	1.5%	1.5%
Used all 30 days	0.1%	0.7%
Any use within the last 30 days	10.5%	13.2%

## **Development of Data Collection Instrument**

The study is designed based on a survey instrument. The survey instrument is called “CSUN Faculty, Students, and Staff preference for tobacco control policies: Compliance and support for smoke-free school policies”. The survey instrument was taken and revised from a pilot survey instrument the author conducted on the CSUN campus in the summer 2010 semester as part of COUGH-Northridge. The pilot test instrument was adopted from an original instrument by CYAN. CYAN created the survey in 2002 and has constantly updated the version of the survey in order to better meet the changing needs of tobacco control and policy at colleges and university campuses in California. Overtime, CYAN modified questions in order to effectively measure responses from participants. For instance, questions such as “do you smoke” were changed to “do you use tobacco products”. Thus, specific tobacco products (cigarettes, cigars, smokeless tobacco, and or pipes) are listed for participants to indicate their usage so more precise information is collected on tobacco use behavior among participants. Changes to policy questions such as “support for designated smoking areas” have been changed to better accommodate smoke-free and tobacco-free campus policies by asking “do you support a 100% smoke-free campus” and “do you support a 100% tobacco-free campus”. CYAN has given the author of this study the permission to use the questions in the survey instrument that was conducted for the purposes of this research study. The letter of permission can be found in Appendix B.

As previously stated, the author pilot tested the first version of the instrument in the summer 2010 session at CSUN. The pilot test instrument can be found in Appendix C. The author pilot tested the original instrument to a total of 300 CSUN students, faculty

and staff. The original instrument was three pages in length and a total of 31 questions with a comment box at the end of the instrument. The first part of the pilot test instrument (questions 1-7) is regarding tobacco use. Participants are asked whether they smoke (question 1) and how many days during the past 30 days they used: cigarettes, cigars, smokeless tobacco, and or pipes (question 2). Next, participants are asked if they smoke on campus and where they usually smoke on campus (question 3 and 4). In this section participants are also asked whether they use chewing tobacco on campus (question 5); whether they have stopped using tobacco for one day or longer because they were trying to quit (question 6); and how many times they have tried to quit using tobacco (question 7). All of these questions were kept and used for the survey instrument used for the purposes of this research except question five; which asks participants if they use chewing tobacco on campus.

The next set of questions in the pilot survey (questions 8-15), are regarding secondhand smoke. Participants are asked how many times they are exposed to secondhand smoke during the current semester (question 8); whether secondhand smoke bothers them (question 9); and whether they experience any immediate health effects such as coughing, wheezing or allergic reactions from secondhand smoke (question 10). In questions 11-15, participants are given statements regarding secondhand smoke in which they either agree or disagree with using a likert scale. For the purposes of this research study, only three of the questions were taken from this section of the pilot instrument regarding secondhand smoke (question 8-10).

Smoking policy questions are asked in the next section (questions 16-20) of the pilot survey. Participants are asked whether they are aware of the current smoking policy at

CSUN (question 17); whether they think the current policy is effective or ineffective (question 17); whether they will support CSUN becoming a smoke-free campus with designated smoking areas in the parking lots (question 18); and whether they would support CSUN becoming a 100% tobacco/smoke-free campus (question 19). These questions were taken and revised in order to better measure the support of stronger smoke-free and tobacco-free campus policies. The scales used in the pilot test for these questions (question 16-20) were also revised and adjusted in order to improve the validity of the instrument.

Since it was a pilot test, eight questions (questions 21- 28) were questions regarding the survey instrument with the intentions to identify revisions to the instrument. For instance, the participants were asked how long the survey took them to complete (question 21), if the directions of the survey were clear (question 22) and for what purposes they think the information would be used (question 23). Five of the questions (question 23-28) were open ended questions in which the participant filling out the survey could write their response. These questions were taken out of the instrument since the answers to those questions were considered to be feedback from participants in order to better improve the instrument. The last part of the pilot test (questions 29-31), were demographic questions which asked participants their gender, their age range, and their status (student, staff, faculty, administration). The demographic portion was modified for the instrument used in this study since the pilot test demographics did not provide for a comprehensive review of participants who contributed to the study.

The pilot test was necessary for the survey instrument in order to improve the questions asked, the format of the questions and the scales used. This will also improve

the content validity of the revised instrument (Creswell, 2009). To make the necessary changes, the author consulted with the help of CYAN's project director who is a tobacco control policy expert. The author also consulted with a statistician in order to approve the validity of the scales used for the questions in the instrument. The pilot test instrument was revised and formatted into the new survey instrument that was used for the author's graduate thesis project. The survey instrument used for the purposes of this research is similar to an instrument that was also used by the COUGH group at San Jose State University. The instrument used for this research is shorter and various questions have been modified in order to more accurately measure the sample population.

### **Research Instrument**

The survey instrument is anonymous and there is no identifying information asked on the survey that can trace the participant who completed the survey. The survey consists of a total of 15 quantitative questions and two open-ended questions (age and amount of tobacco used in the past 30 days). The survey instrument can be found in Appendix D. It consists of a one-page front and back questionnaire which participants complete. The survey instrument was also available online using the online data collection program Qualtrics. The first part of the survey instrument contains basic background questions (primary status, gender, ethnicity, and age) in order to classify the participants (questions 1-4). The question regarding the participants age (question number 4) is an open-ended question in which the participant indicates their age. This method was used in order to accurately measure an average age of all participants that completed the survey. The second part of the survey is regarding secondhand smoke exposure and whether the participant suffers from allergies or sensitivity when exposed to secondhand smoke

(questions 5-7). The next part of the survey inquires if the participant is aware of the current smoking policy on the CSUN campus (question 8) and whether they consider the current policy as effective (question 9). The fourth part of the survey examines the participant's levels of support for a 100% smoke-free campus policy and a 100% tobacco-free campus policy (questions 10-11). Next, participants are asked what effect a smoke-free policy would have if implemented on the CSUN campus on student quality of life on campus (question 12).

The last part of the survey contains questions regarding tobacco use (questions 13-17). Participants will fill in the number of days they used tobacco products (cigarettes, cigars, smokeless tobacco, and or pipes) in the last 30 days. If participants have not used any type of tobacco products then they can indicate by writing "0" and skipping the last four questions in the instrument (questions 14-17). Participants that indicate that they are tobacco users are asked whether they smoke on campus and if they have tried to quit using tobacco in the past twelve months (questions 14-17). A comment box is provided at the end of the survey for participants to leave any comments or feedback. Additional resources for tobacco users who would like to quit smoking or using tobacco products is also provided at the end of the survey instrument.

### **Theory of Research Instrument**

The Theory of Diffusion of Innovations by Everett Rogers applies to the survey instrument used for the purposes of this research study. Since the study is measuring participants' knowledge, attitude and belief of the smoking policy on the CSUN campus, the Theory of Diffusion of Innovations applies to the questions and scales used in the survey instrument. In this theory, diffusion is a process by which an innovation is

communicated through certain channels over time among the members of a social system (Rodgers, 1962). Given that the decisions are “not authoritative or collective, each member of the social system faces his or her own innovation decision that follows a 5-step process” (Rodgers, 1962, p. 162). The five stages of adoption are knowledge, persuasion, decision, implementation and confirmation (Rodgers, 1962). In knowledge, a person becomes aware of innovation and has some idea of how it functions (Rodgers, 1962). In persuasion a person forms a favorable or unfavorable attitude toward the innovation (Rodgers, 1962). Next, in the decision process the person engages in activities that lead to a choice to adopt or reject the innovation (Rodgers, 1962). In the implementation step a person puts an innovation to use (Rodgers, 1962). Lastly, in the confirmation step a person evaluates the results of an innovation decision already made (Rodgers, 1962). In the adopter categories of the Theory of Diffusion of Innovations there are the innovators, early adopters, early majority, late majority and laggards (Rodgers, 1962).

Six questions in the survey instrument apply to the Theory of Diffusion of Innovations. Question number eight asks participants if they are aware that CSUN has a smoking policy that prohibits smoking within 20 to 25 feet of buildings. This is a knowledge based question since the participants either indicate that they are aware or not aware of the current policy on campus. Question number six in the survey instrument examines how well participants agree or disagree with the following statement: “secondhand smoke on campus bothers me”. Participants are given a likert scale and can select one of the following: strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree. Depending on the answer of the participants and whether or not

they agree or disagree with this question signifies the persuasion step of the five-step process. As previously discussed, persuasion is when a person forms a favorable or unfavorable attitude towards the innovation (Rodgers, 1962). In the case with question number six, it applies to the potential dangers of secondhand smoke and whether the participant has a favorable or unfavorable attitude towards it. Next, question number nine in the survey instrument asks participants their opinion regarding the current smoking policy at CSUN. Participants can choose one of the following answers: very effective, somewhat effective, neutral, not effective/ineffective and not sure. The persuasion step from the five-step process is used for this question on the basis of whether or not the participant thinks the current policy is effective or ineffective and therefore, if their attitude towards it is favorable or unfavorable.

In questions number ten and eleven, the participants are asked to indicate their level of support of a 100% smoke-free campus (smoking is prohibited on campus property including parking lots) and a 100% tobacco-free campus (prohibits the use of all tobacco products including smoke-emanating and smokeless products). In both questions participants are asked to choose one of the following answers: strongly support, support, neutral, no support, and strongly oppose. Both of these questions are considered the decision step of the five-step process of the Theory of Diffusion of Innovations. In the decision process a person engages in activities that lead to a choice to either adopt or reject the innovation which in this case is either a 100% smoke-free or a 100% tobacco-free campus policy (Rodgers, 1962). The last question that uses the Theory of Diffusion of Innovations is question number eleven. The participant is asked “What effect if any do you think a policy making this campus completely smoke-free would have on student

quality of life on campus? (Such as student learning and student enrollment)”. The participants are given four answer choices and they can select one of the following: major effect, moderate effect, neutral, and no effect. The decision process is used for this question since the participant is theoretically considering the effect a smoke-free campus policy would have on the student quality of life at CSUN. Either the participant indicates there is a major to moderate effect in which they have adopted the innovation of a smoke-free campus policy. If the participant believes there will be no effect then the participant has rejected the innovation of a smoke-free campus policy.

As stated previously, the adopter categories of the Theory of Innovations include the innovators, early adopters, early majority, late majority and laggards (Rodgers, 1962). Participants who completed the survey fall into one or two of these categories depending on how they answer questions ten and eleven in the survey instrument. For participants that indicate on question ten and eleven that they strongly support either a 100% smoke-free or 100% tobacco-free campus policy then they are considered innovators and early adopters according to the Theory of Diffusion of Innovations. Innovators are defined as individuals who are first to adopt an innovation (Rodgers, 1962). Early adopters follow second behind innovators at adopting an innovation (Rodgers, 1962). Thus, by participants selecting the strongly support option for these questions they can be grouped in the innovator and early adopter category. If a participant indicated that they support either question ten and or eleven, this places them in the early majority category. Individuals who are considered early majority adopt an innovation after a varying degree of time and thus their time of adapting is longer than the innovators and early adopters (Rodgers, 1962). Survey respondents who indicated they were neutral to question ten and

eleven are considered the late majority. Individuals who are considered in the group of late majority usually adopt an innovation after the average member of the society (Rodgers, 1962). These individuals approach an innovation with a high degree of skepticism and after the majority of society has adopted the innovation (Rodgers, 1962). Lastly, those who indicated no support, or strongly oppose on question ten and eleven fall into the laggard category. These are individuals who are the last to adopt an innovation (Rodgers, 1962). Individuals who fall into the laggard category show little to no opinion in leadership roles (Rodgers, 1962).

### **Implementation**

The survey instrument was administered two ways. The first was by paper copy in which participants filled out the front and back of the survey. The survey was also available online for participants. The survey was uploaded on the data collection program Qualtrics for participants to fill out electronically. The survey instrument is anonymous and there is no identifying information asked from the participant which would associate them with their completed survey. Implementation of the survey instrument began in March 2013 after the instrument was approved by the Institutional Review Board of CSUN. Data collection ended on August 9, 2013 after five months of implementation.

The survey was administered to a random sample of the CSUN community which consisted of students, staff and faculty. This survey method is known as a random non-probability sample since the author is relying on students, faculty and staff within the CSUN community to take survey. The survey instrument takes approximately five to ten minutes to complete. For the surveys that were completed online, participants could enter for a chance to win one of four \$25 gift cards if the participant agreed to enter themselves

into the prize raffle. On the last page of the online survey participants were given a space to provide their email address in order to enter into the prize raffle. Since the survey is anonymous the portion of entering their email for the raffle is not linked to participants' completed online survey. Participants who completed the paper version of the survey could not enter into the raffle because of the identifying information they would have to provide on their completed survey. Four participants who completed the online survey and entered into the raffle were selected as winners of the gift certificate. The author used a randomly selected process in which all participants had an equal chance of winning.

The paper version of the survey was administered to CSUN students. Since there is a high student population on the CSUN campus, students were more accessible to take the paper version of the survey. Students were asked to participate in the survey on various days around campus. Events that were held on campus such as Earth Day were days in which larger number of students participated in taking the survey. In addition the author administered the paper version survey to five undergraduate classes in the summer session with the permission of each professor. A total of 237 participants completed the paper version of the survey.

The electronic survey was implemented using two methods in which participants were invited to take part in the survey. The first method was using a listserv of approximately 120 students, faculty, staff and administrators who are involved with the Research Infrastructure in Minority Intuitions (RIMI) program at CSUN. Next, the CSUN campus directory which provides the contact information of faculty, staff and administrators who are currently employed with the university was used to invite participants to take part in the survey. Randomly selected participants were emailed an

invitation to participate in the anonymous survey by being provided with the direct link of the survey. A total of 2,124 potential participants were e-mailed an invitation to participate in the survey using the campus directory. The e-mailed invitation for participants to take part in the survey can be found in Appendix E. A total of 573 participants completed the electronic survey.

### **Data Analysis**

The statistical analysis was conducted in two separate processes. First, the survey results from the paper version of the survey were coded according to each individual answer and entered into Microsoft® Excel program. Surveys that were completed using the electronic version were transferred from the online Qualtrics program and imported into Microsoft® Excel. All the data was combined together with each completed survey being given a number in order to identify if it was completed by paper or online. The data was then coded and cleaned using Microsoft® Excel before being analyzed. For classification purposes, all participants who indicated that they were administrators were grouped as staff. Five incomplete surveys were taken out of the study due to missing answers. All data was transferred to the Statistical Package for the Social Science (SPSS) version 20.0 for analysis. All data was analyzed using SPSS to run all statistical tests for the research study. All hypotheses were measured at a level of 0.05 significance.

### **Summary**

Organization of the project was discussed along with selecting a Graduate Thesis committee and approval of the thesis proposal. The Institutional Review Board at CSUN approved the research instrument to begin data collection with human subjects. For the focus of this study the author has selected to survey students, faculty, and staff on the

CSUN campus. Development of the data collection instrument is thoroughly discussed with the history of the instrument and the pilot-test study. The pilot test was necessary for the survey instrument in order to improve the questions asked, the format of the questions and the scales used. Next, the research instrument used for this study was explained in detail. The survey instrument was available by paper-copy and online for participants to fill out. Further, the theory model used for the research instrument, the Theory of Diffusion of Innovations by Everett Rodgers is discussed. Implementation methods of data collection are mentioned and took approximately five months to complete. Finally, data analysis was done in order to accurately measure the research question and hypotheses. Chapter 4 will present the results of the data collected from the research instrument.

## CHAPTER 4: RESULTS

This chapter contains the results section of the research study. A detailed description of the sample will be discussed. Next, the hypotheses tests conducted will be mentioned. Further, the statistical findings derived from the hypotheses tests will be presented.

### **Description of the Sample**

The study population consisted of a total of 805 participants from the CSUN community. The sample consists of 366 students (45.5%), 215 staff members (26.7%), 196 faculty, (24.3%), and 28 administrators (3.5%). There were a total of 295 respondents (36.6%) who reported they were undergraduate students and 67 respondents (8.3%) reported they were graduate students. A total of four students did not report their student status. When looking at gender, 484 participants (60.1%) indicated they were female and 320 participants (39.8%) indicated they were male. In the study, participants were asked to identify themselves in one of the eight categories for ethnicity. The top four ethnicities consisted of 374 (46.5%) Caucasian participants, 166 (23.1%) Hispanic participants, 120 (14.9%) Asian participants, and 55 (6.8%) Black/African American participants. Ages of the participants ranged from 17 to 82 years old with a mean age of 37. There were a total of 131 participants who indicated that they are current tobacco users (63 females and 68 males). A complete table of participants' demographics can be found on the next page in Table 6.

Table 6: Characteristics of Respondents: by Status, Ethnicity, and Gender.

Characteristic	N (N=805)	Frequency Percent
<b>Status</b>		
Administration	28	3.5%
Faculty	196	24.3%
Staff	215	26.7%
Students	366	45.5%
<b>Ethnicity</b>		
American Indian/Native American	10	12%
Asian	120	14.9%
Black/African American	55	6.8%
Hispanic/Latino	186	23.1%
Middle-Eastern	32	4.0%
No response	6	.6%
Other	9	1.1%
Pacific Islander	13	1.6%
White/Caucasian	374	46.5%
<b>Gender</b>		
Female	484	60.1%
Male	320	39.8%
<b>Tobacco Usage</b>		
Female	63	7.83%
Males	68	8.45%

### **Hypotheses and Analyses Tests Conducted**

There are a total of six hypotheses for the purposes of this study. Each hypothesis is broken down in order to measure the status category of the participants. In order to measure the results of the hypotheses, chi-square analyses were conducted to find the level of significance. Table 7 on the next page lists the hypotheses and the analysis tests that were conducted in order to test for significance.

Table 7: Hypotheses and Analyses Tests Conducted

Hypothesis	Analysis Test Conducted
H1: Students who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% smoke-free campus than students who believe the current smoking policy is effective. H1A: Staff “.....” H2B: Faculty “.....”	Chi-Square
H2: Student who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% tobacco-free campus than students who believe the current smoking policy is effective. H2A: Staff “.....” H2B: Faculty “.....”	Chi-Square
H3: Students who use tobacco products (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% smoke-free campus policy than students who do not use tobacco products H3A: Staff “.....” H3B: Faculty “.....”	Chi-Square
H4: Students who use tobacco products on campus (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% tobacco-free campus policy than students who do not use tobacco products. H4A: Staff “.....” H4B: Faculty “.....”	Chi-Square
H5: Students who indicate that they are exposed to secondhand smoke exposure more than a few times a week or more on campus; will be more in support of a 100% smoke-free campus policy than students who are never exposed to second-hand smoke on campus. H5A: Staff “.....” H5B: Faculty “.....”	Chi-Square
H6: Students who indicate that they are exposed to secondhand smoke exposure more than a few times a week or more on campus; will be more in support of a 100% tobacco-free campus policy than students who are never exposed to second-hand smoke on campus. H6A: Staff “.....” H6B: Faculty “.....”	Chi-Square

## Results of Hypotheses Tests

All data was analyzed using SPSS. All hypotheses were measured at a significance level of 0.05.

**H1:** Students who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% smoke-free campus than students who believe the current smoking policy is effective.

Chi-square test was conducted to measure H1. Results yielded statistically significant results among students with  $\chi^2 (12)=45.690, p<0.05$ . The p-value was calculated to be .000 showing significance since  $p<0.05$ . Table 8 below shows how students responded to the effectiveness of the current CSUN smoking policy and their level of support for a 100% smoke-free campus policy.

Table 8: Student response for H1

N=366	Strongly Oppose	No Support	Neutral	Support	Strongly Support	Total
Ineffective	4 (1.15%)	6 (1.6%)	18 (4.9%)	16 (4.4%)	78 (21.3%)	122 (33.3%)
Neutral	8 (2.2%)	8 (2.2%)	17 (4.6%)	18 (4.9%)	34 (9.3%)	85 (23.2%)
Somewhat effective	11 (3.0%)	14 (3.8%)	18 (4.9%)	32 (8.7%)	41 (11.2%)	116 (31.7%)
Very effective	12 (3.3%)	4 (1.1%)	7 (1.9%)	6 (1.6%)	14 (3.8%)	43 (11.7%)

**H1A:** Staff who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% smoke-free campus than staff who believe the current smoking policy is effective.

Chi-square test was conducted to measure H1A. Results yielded statistically significant results among staff with  $\chi^2 (12)=62.073, p<0.05$ . The p-value was calculated to be .000 showing significance since  $p<0.05$ . Table 9 on the next page shows how staff

responded to the effectiveness of the current CSUN smoking policy and their level of support for a 100% smoke-free campus policy.

Table 9: Staff Response for H1A

N=243	Strongly Oppose	No Support	Neutral	Support	Strongly Support	Total
Ineffective	0	4 (1.6%)	5 (2.1%)	13 (5.3%)	72 (29.6%)	94 (38.7%)
Neutral	2 (0.8%)	2 (0.8%)	0	4 (1.6%)	13 (5.3%)	21 (8.6%)
Somewhat effective	11 (4.5%)	11 (4.5%)	11 (4.5%)	14 (5.8%)	50 (20.6%)	97 (39.9%)
Very effective	11 (4.5%)	8 (3.3%)	4 (1.6%)	3 (1.2%)	5 (2.1%)	31 (12.8%)

**H1B:** Faculty who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% smoke-free campus than faculty who believe the current smoking policy is effective.

Chi-square test was conducted to measure H1B. Results yielded statistically significant results among faculty with  $\chi^2(12)=61.712, p<0.05$ . The p-value was calculated to be .000 showing significance since  $p<0.05$ . Table 10 on the next page shows how faculty responded to the effectiveness of the current CSUN smoking policy and their level of support for a 100% smoke-free campus policy. Further, Table 11 also on the next page, shows the results of Hypotheses H1, H1A and H1B.

Table 10: Faculty response for H1B.

N=196	Strongly Oppose	No Support	Neutral	Support	Strongly Support	Total
Ineffective	0	2 (0.5%)	3 (1.5%)	3 (1.5%)	62 (31.6%)	69 (35.2%)
Neutral	3 (1.5%)	1 (0.5%)	2 (1.0%)	5 (2.6%)	9 (4.6%)	20 (10.2%)
Somewhat effective	2 (1.0%)	7 (3.6%)	7 (3.6%)	10 (5.1%)	38 (19.4%)	64 (32.7%)
Very effective	12 (6.1%)	8 (4.1%)	4 (2.0%)	5 (2.6%)	14 (7.1%)	43 (21.9%)

Table 11: Results of Hypotheses H1, H1A and H1B

Hypotheses	N	Value	Df	Significance	Phi Value	<i>p</i>
H1	366	46.690	12	.000	.353	<i>p</i> <0.05
H1A	243	62.073	12	.000	.505	<i>p</i> <0.05
H1B	196	61.712	12	.000	.561	<i>p</i> <0.05

**H2:** Students who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% tobacco-free campus than students who believe the current smoking policy is effective.

Chi-square test was conducted to measure H2. Results yielded statistically significant results among students with  $\chi^2(12)=52.843, p<0.05$ . The p-value was calculated to be .000 showing significance since  $p<0.05$ . Table 12 on the next page shows how students responded to the effectiveness of the current CSUN smoking policy and their level of support for a 100% tobacco-free campus policy.

Table 12: Student Response for H2

N=366	Strongly Oppose	No Support	Neutral	Support	Strongly Support	Total
Ineffective	9 (2.5%)	8 (2.2%)	28 (7.7%)	13 (3.6%)	64 (17.5%)	122 (33.3%)
Neutral	9 (2.5%)	7 (1.9%)	21 (5.7%)	18 (4.9%)	30 (8.2%)	85 (23.2%)
Somewhat effective	11 (3.0%)	19 (5.2%)	34 (9.3%)	24 (6.6%)	28 (7.7%)	116 (31.7%)
Very effective	15 (4.1%)	7 (1.9%)	6 (1.6%)	4 (1.1%)	11 (3.0%)	43 (11.7%)

**H2A:** Staff who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% tobacco-free campus than staff who believe the current smoking policy is effective.

Chi-square test was conducted to measure H2A. Results yielded statistically significant results among staff with  $\chi^2 (12)=52.567, p<0.05$ . The p-value was calculated to be .000 showing significance since  $p<0.05$ . Table 13 below shows how staff responded to the effectiveness of the current CSUN smoking policy and their level of support for a 100% tobacco-free campus policy.

Table 13: Staff Response for H2A

N=243	Strongly Oppose	No Support	Neutral	Support	Strongly Support	Total
Ineffective	1 (0.4%)	9 (3.7%)	15 (6.2%)	18 (7.4%)	51 (21.0%)	94 (38.7%)
Neutral	4 (1.6%)	2 (0.8%)	2 (0.8%)	1 (0.4%)	12 (4.9%)	21 (8.6%)
Somewhat effective	12 (4.9%)	17 (7.0%)	15 (6.2%)	13 (5.3%)	40 (16.5%)	97 (39.9%)
Very effective	13 (5.3%)	8 (3.3%)	4 (1.6%)	2 (0.8%)	4 (1.6%)	31 (12.8%)

**H2B:** Faculty who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% tobacco-free campus than faculty who believe the current smoking policy is effective.

Chi-square test was conducted to measure H2B. Results yielded statistically significant results among faculty with  $\chi^2(12)=43.319, p<0.05$ . The p-value was calculated to be .000 showing significance since  $p<0.05$ . Table 14 below shows how faculty responded to the effectiveness of the current CSUN smoking policy and their level of support for a 100% tobacco-free campus policy. Further, Table 15 below shows the results of Hypotheses H2, H2A and H2B.

Table 14: Faculty Response for H2B

N=196	Strongly Oppose	No Support	Neutral	Support	Strongly Support	Total
Ineffective	1 (0.5%)	5 (2.6%)	12 (6.1%)	5 (2.6%)	46 (23.5%)	69 (35.2%)
Neutral	4 (2.0%)	2 (1.0%)	6 (3.1%)	2 (1.0%)	6 (3.1%)	20 (10.2%)
Somewhat effective	4 (2.0%)	10 (5.1%)	9 (4.6%)	11 (5.6%)	30 (15.3%)	64 (32.7%)
Very effective	14 (7.1%)	7 (3.6%)	6 (3.1%)	4 (2.0%)	12 (6.1%)	43 (21.9%)

Table 15: Results of Hypotheses H2, H2A and H2B

Hypotheses	N	Value	Df	Significance	Phi Value	P
H2	366	52.843	12	.000	.380	$p<0.05$
H2A	243	52.567	12	.000	.465	$p<0.05$
H2B	196	43.319	12	.000	.470	$p<0.05$

**H3:** Students who use tobacco products (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% smoke-free campus policy than students who do not use tobacco products

Chi-square test was conducted to measure H3. Results yielded statistically significant results among students with  $X^2(4)=60.420, p<0.05$ . The p-value was calculated to be .000 showing significance since  $p<0.05$ . Table 16 below shows how students responded to H3.

Table 16: Student Response for H3

N=366	Strongly Oppose	No Support	Neutral	Support	Strongly Support	Total
Non tobacco user	13 (3.6%)	22 (6.0%)	46 (12.6%)	57 (15.6%)	155 (42.3%)	293 (80.1%)
Tobacco user	22 (6.0%)	10 (2.7%)	14 (3.8%)	15 (4.1%)	12 (3.3%)	73 (19.9%)

**H3A:** Staff who use tobacco products (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% smoke-free campus policy than staff who do not use tobacco products.

Chi-square test was conducted to measure H3A. Results yielded statistically significant results among staff with  $X^2(4)=52.975, p<0.05$ . The p-value was calculated to be .000 showing significance since  $p<0.05$ . Table 17 below shows how staff responded to H3A.

Table 17: Staff Response to H3A

N=243	Strongly Oppose	No Support	Neutral	Support	Strongly Support	Total
Non tobacco user	13 (5.3%)	22 (9.0%)	17 (7.7%)	30 (12.3%)	154 (42.3%)	221 (91.0%)
Tobacco user	11 (4.5%)	3 (1.2%)	3 (1.2%)	4 (1.6%)	1 (0.4%)	21 (9.0%)

**H3B:** Faculty who use tobacco products (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% smoke-free campus policy than faculty who do not use tobacco products.

Chi-square test was conducted to measure H3B. Results did not yield statistically significant results among faculty with  $\chi^2(4)=9.462, p>0.05$ . The p-value was calculated to be .051 showing no significance since  $p>0.05$ . Table 18 below shows how faculty responded for H3B. Further, Table 19 below shows the results of Hypotheses H3, H3A and H3B.

Table 18: Faculty Response for H3B

N=196	Strongly Oppose	No Support	Neutral	Support	Strongly Support	Total
Non tobacco user	14 (7.1%)	16(8.2%)	14 (7.1%)	23 (11.7%)	119 (60.7%)	186 (94.9%)
Tobacco user	3 (1.5%)	1 (0.5%)	2 (1.0%)	0	4 (2.0%)	10 (5.1%)

Table 19: Results of Hypotheses H3, H3A and H3B

Hypotheses	N	Value	Df	Significance	Phi Value	<i>p</i>
H3	366	60.420	4	.000	.406	$p<0.05$
H3A	243	52.975	4	.000	.466	$p<0.05$
H3B	196	9.462	4	.051	.220	$p>0.05^*$

\*Indicates results were not significant

**H4:** Students who use tobacco products on campus (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% tobacco-free campus policy than students who do not use tobacco products.

Chi-square test was conducted to measure H4. Results yielded statistically significant results among students with  $X^2(4) = 61.274$ ,  $p < 0.05$ . The p-value was calculated to be .000 showing significance since  $p < 0.05$ . Table 20 below shows how students responded for H4.

Table 20: Student Response for H4

N=366	Strongly Oppose	No Support	Neutral	Support	Strongly Support	Total
Non tobacco user	18 (4.9%)	28 (7.7%)	73 (19.9%)	50 (13.7%)	124 (33.9%)	293 (80.1%)
Tobacco user	26 (7.1%)	13 (3.6%)	16 (4.4%)	9 (2.5%)	18 (2.5%)	73 (19.9%)

**H4A:** Staff who use tobacco products on campus (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% tobacco-free campus policy than staff who do not use tobacco products.

Chi-square test was conducted to measure H4A. Results yielded statistically significant results among staff with  $X^2(4) = 29.567$ ,  $p < 0.05$ . The p-value was calculated to be .000 showing significance since  $p < 0.05$ . Table 21 below shows how staff responded to H4A.

Table 21: Staff Response for H4

N=244	Strongly Oppose	No Support	Neutral	Support	Strongly Support	Total
Non tobacco user	21 (8.6%)	30 (12.3%)	32 (13.1%)	31 (12.7%)	107 (44.3%)	221 (91.0%)
Tobacco user	9 (3.7%)	6 (2.5%)	4 (1.6%)	3 (1.2%)	0	22 (9.0%)

**H4B:** Faculty who use tobacco products on campus (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% tobacco-free campus policy than faculty who do not use tobacco products.

Chi-square test was conducted to measure H4B. Results did not yield statistically significant results among faculty with  $\chi^2(4)=6.693, p>0.05$ . The p-value was calculated to be .153 showing no significance since  $p>0.05$ . Table 22 below shows how faculty responded for H4B. Further, Table 23 below shows the results of Hypotheses H4, H4A and H4B.

Table 22: Faculty Response for H4B

N=196	Strongly Oppose	No Support	Neutral	Support	Strongly Support	Total
Non tobacco user	20 (10.2%)	24 (12.2%)	30 (15.3%)	22 (11.2%)	90 (45.9%)	186 (94.9%)
Tobacco user	3 (1.5%)	0	3 (1.5%)	0	4 (2.0%)	10 (5.1%)

Table 23: Results of Hypotheses H4, H4A and H4B

Hypotheses	N	Value	Df	Significance	Phi Value	<i>p</i>
H4	366	61.274	4	.000	.409	$p<0.05$
H4A	243	29.567	4	.000	.348	$p<0.05$
H4B	196	6.693	4	.153	.185	$p>0.05^*$

\*Indicates results were not significant

**H5:** Students who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% smoke-free campus policy than students who are never exposed to secondhand smoke on campus.

Chi-square test was conducted to measure H5. Results did not yield statistically significant results among students with  $\chi^2(16)=25.052, p>0.05$ . The p-value was calculated to be .069 showing no significance since  $p>0.05$ . Table 24 below shows how students responded for H5.

Table 24: Student Response for H5.

N=364	Strongly oppose	No support	Neutral	Support	Strongly support	Total
Never	7 (1.9%)	2 (0.5%)	10 (2.7%)	6 (1.6%)	18 (4.9%)	43 (11.8%)
A few times a month	11 (3.0%)	12 (3.3%)	15 (4.1%)	25 (6.9%)	41 (11.3%)	104 (28.6%)
A few times a week	12 (3.3%)	9 (2.5%)	25 (6.9%)	26 (7.1%)	52 (14.3%)	124 (34.1%)
Every day	3 (0.8%)	4 (1.1%)	2 (0.5%)	10 (2.7%)	31 (8.5%)	50 (13.7%)
Multiple times a day	1 (0.3%)	5 (1.4%)	8 (2.2%)	4 (1.1%)	25 (6.9%)	43 (11.8%)

\*2 student respondents excluded from results due to incomplete responses.

**H5A:** Staff who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% smoke-free campus policy than staff who are never exposed to secondhand smoke on campus.

Chi-square test was conducted to measure H5A. Results yielded statistically significant results among staff with  $\chi^2(16)=77.530, p<0.05$ . The p-value was calculated to be .000 showing significance since  $p<0.05$ . Table 25 on the next page shows how staff responded to H5A.

Table 25: Staff Response to H5A

N=243	Strongly oppose	No support	Neutral	Support	Strongly support	Total
Never	10 (4.1%)	8 (3.3%)	3 (1.2%)	6 (2.5%)	5 (2.1%)	32 (13.2%)
A few times a month	11 (4.5%)	12 (4.9%)	13 (5.3%)	12 (4.9%)	35 (14.4%)	83 (34.2%)
A few times a week	0	2 (0.8%)	3 (1.2%)	11 (4.5%)	40 (16.5%)	56 (23.0%)
Every day	2 (0.8%)	2 (0.8%)	0	5 (2.1%)	32 (13.2%)	41 (16.9%)
Multiple times a day	1 (0.4%)	1 (0.4%)	1 (0.4%)	0	28 (11.5%)	31 (12.8%)

**H5B:** Faculty who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% smoke-free campus policy than faculty who are never exposed to secondhand smoke on campus.

Chi-square test was conducted to measure H5B. Results yielded statistically significant results among faculty with  $\chi^2(16)=45.505, p<0.05$ . The p-value was calculated to be .000 showing significance since  $p<0.05$ . Table 26 below shows how faculty responded to H5B. Further, Table 27 on the next page shows the results of hypotheses H5, H5A and H5B.

Table 26: Faculty Response for H5B

N= 196	Strongly oppose	No support	Neutral	Support	Strongly support	Total
Never	6 (3.1%)	6 (3.1%)	4 (2.0%)	7 (3.6%)	17 (8.7%)	40 (20.4%)
A few times a month	10 (5.1%)	7 (3.6%)	3 (1.5%)	6 (3.1%)	26 (13.3%)	52 (26.5%)
A few times a week	1 (0.5%)	4 (2.0%)	5 (2.6%)	9 (4.6%)	33 (16.8%)	52 (26.55)
Every day	0	0	3 (1.5%)	1 (0.5%)	23 (11.7%)	27 (13.8%)
Multiple times a day	0	0	1 (0.5%)	0	24 (12.2%)	25 (12.8%)

Table 27: Results of Hypotheses H5, H5A and H5B

Hypotheses	N	Value	Df	Significance	Phi Value	P
H5	366	25.052	16	.069	.262	$p > 0.05^*$
H5A	243	77.530	16	.000	.565	$p < 0.05$
H5B	196	42.505	16	.000	.466	$p < 0.05$

\*Indicates results were not significant

**H6:** Students who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% tobacco-free campus policy than students who are never exposed to second-hand smoke on campus.

Chi-square test was conducted to measure H6. Results yielded statistically significant results among students with  $\chi^2(16)=35.546$ ,  $p < 0.05$ . The p-value was calculated to be .002 showing significance since  $p < 0.05$ . Table 28 below shows how students responded to H6.

Table 28: Student Response to H6

N= 364	Strongly oppose	No support	Neutral	Support	Strongly support	Total
Never	7 (1.9%)	6 (1.6%)	7 (1.9%)	4 (1.1%)	19 (5.2%)	43 (11.8%)
A few times a month	15 (4.1%)	15 (4.1%)	26 (7.1%)	19 (5.2%)	29 (8.0%)	104 (28.6%)
A few times a week	14 (3.8%)	9 (2.5%)	44 (12.1%)	23 (6.3%)	34 (9.3%)	124 (34.1%)
Every day	5 (1.4%)	5 (1.4%)	7 (1.9%)	5 (1.4%)	28 (7.7%)	50 (13.7%)
Multiple times a day	2 (0.5%)	6 (1.6%)	5 (1.4%)	7 (1.9%)	23 (6.3%)	43 (11.8%)

\*2 student respondents excluded from results due to incomplete responses.

**H6A:** Staff who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% tobacco-free campus policy than staff who are never exposed to secondhand smoke on campus.

Chi-square test was conducted to measure H6A. Results yielded statistically significant results among staff with  $\chi^2(16)=82.090$ ,  $p<0.05$ . The p-value was calculated to be .000 showing significance since  $p<0.05$ . Table 29 below shows how staff responded to H6A.

Table 29: Staff Response for H6A

N= 243	Strongly oppose	No support	Neutral	Support	Strongly support	Total
Never	14 (5.8%)	6 (2.5%)	3 (1.2%)	5 (2.1%)	4 (1.6%)	32 (13.2%)
A few times a month	11 (4.5%)	22 (9.1%)	16 (6.6%)	11 (4.5%)	23 (9.5%)	83 (34.2%)
A few times a week	2 (0.8%)	3 (1.2%)	10 (4.1%)	8 (3.3%)	33 (13.6%)	56 (23.0%)
Every day	2 (0.8%)	4 (1.6%)	0	8 (3.3%)	27 (11.1%)	41 (16.9%)
Multiple times a day	1 (0.4%)	1 (0.4%)	7 (2.9%)	2 (0.8%)	20 (8.2%)	31 (12.8%)

**H6B:** Faculty who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% tobacco-free campus policy than faculty who are never exposed to secondhand smoke on campus.

Chi-square test was conducted to measure H6B. Results yielded statistically significant results among faculty with  $\chi^2(16)=42.378$ ,  $p<0.05$ . The p-value was calculated to be .000 showing significance since  $p<0.05$ . Table 30 on the next page shows how faculty responded for H6B. Further, Table 31 on the next page shows the results of Hypotheses H6, H6A and H6B.

Table 30: Faculty Response for H6B

N=196	Strongly oppose	No support	Neutral	Support	Strongly support	Total
Never	8 (4.1%)	4 (2.0%)	8 (4.1%)	6 (3.1%)	14 (7.1%)	40 (20.4%)
A few times a month	14 (7.1%)	7 (3.6%)	4 (2.0%)	5 (2.6%)	22 (11.7%)	52 (26.5%)
A few times a week	1 (0.5%)	10 (5.1%)	10 (5.1%)	8 (4.1%)	23 (11.7%)	52 (26.5%)
Every day	0	3 (1.5%)	7 (3.6%)	1 (0.5%)	16 (8.2%)	27 (13.8%)
Multiple times a day	0	0	4 (2.0%)	2 (1.0%)	19 (9.7%)	25 (12.8%)

Table 31: Results of Hypotheses H6, H6A and H6B

Hypotheses	N	Value	df	Significance	Phi Value	<i>p</i>
H6	366	36.546	16	.002	.317	<i>p</i> <0.05
H6A	243	82.090	16	.000	.581	<i>p</i> <0.05
H6B	196	42.378	16	.000	.465	<i>p</i> <0.05

## Summary

The study population consisted of a total of 805 participants from the CSUN community. The majority of the sample consisted of CSUN students. A total of 366 students participated in the survey. Additionally, participants included 215 staff members, 196 faculty and 28 administrators. For classification purposes, participants who indicated they were administrators were grouped as staff members in order to accurately measure the hypotheses tests conducted. There are a total of six hypotheses for the purposes of this study. Each hypothesis is broken down in order to measure the status category of the participants. Chi-squared tests were conducted for all the hypotheses in order to measure the significance of the results. The hypotheses that were accepted

included: H1, H1A, H1B, H2, H2A, H2B, H3, H3A, H4, H4A, H5A, H5B, H6, H6A, and H6B. The hypotheses that were rejected included: H3B, H4B, and H5. In the next chapter a detailed discussion of the results will be presented.

## CHAPTER 5: DISCUSSION

This chapter contains the discussion section of the research study. A detailed examination of the results will be presented. Further, limitations of the study will be discussed that may be a useful to guide future research efforts with this topic.

### Discussion of Results

As stated earlier, all hypotheses were measured at a 0.05 level of significance. The following will discuss the results of each individual hypotheses and their significance.

**H1:** Students who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% smoke-free campus than students who believe the current smoking policy is effective.

Results yielded statistically significant among CSUN students with  $p < 0.05$ . A total of 239 students (65.3%) indicated they either “strongly support” or “support” a 100% smoke-free campus policy. These students are classified as innovators, early adopters and early majority according to the Theory of Diffusion of Innovations. Since 239 students reported they either “strongly support” or “support” a 100% smoke-free policy they are considered to be individuals who are the first to adopt an innovation (Rodgers, 1962). Additionally, 60 students (16.4%) responded as “neutral” and a total of 67 students (18.3%) indicated they either “strongly oppose” or “no support” for a 100% smoke-free campus policy. Consequently, 94 students (25.7%) indicated the current CSUN smoking policy is “ineffective” and either “strongly support” or “support” a 100% smoke-free campus policy. In contrast, 16 students (4.4%) indicated the current CSUN smoking policy is “very effective” and they either “strongly oppose” or “no support” for

a 100% smoke-free campus policy. Therefore for H1, students who believe that the current CSUN smoking policy is ineffective are more supportive of a 100% smoke-free campus than students who believe the current smoking policy is effective.

**H1A:** Staff who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% smoke-free campus than staff who believe the current smoking policy is effective.

Results yielded statistically significant among staff with  $p < 0.05$ . A total of 174 staff (71.6%) indicated they either “strongly support” or “support” a 100% smoke-free campus policy. Additionally, 20 staff (8.2%) responded as “neutral” and a total of 49 staff (20.2%) indicated they either “strongly oppose” or “no support” for a 100% smoke-free campus policy. Consequently, 85 staff (34.9%) reported the current CSUN smoking policy is “ineffective” and either “strongly support” or “support” a 100% smoke-free campus policy. In contrast, 19 staff (7.8%) identified the current CSUN smoking policy is “very effective” and they “strongly oppose” or “no support” for a 100% smoke-free campus policy. Therefore for H1A, staff who indicated that the current CSUN smoking policy is ineffective are more supportive of a 100% smoke-free campus than staff who believe the current smoking policy is effective.

**H1B:** Faculty who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% smoke-free campus than faculty who believe the current smoking policy is effective.

Results yielded statistically significant among faculty with  $p < 0.05$ . A total of 146 faculty (74.50%) indicated they either “strongly support” or “support” a 100% smoke-free campus policy. Thus, 15 faculty responded as “neutral” and a total of 34 faculty

(17.40%) indicated they either “strongly oppose” or “no support” for a 100% smoke-free campus policy. Consequently, 65 faculty (33.1%) indicated the current CSUN smoking policy is “ineffective” and either “strongly support” or “support” a 100% smoke-free campus policy. In contrast, 20 faculty (10.2%) reported the current CSUN smoking policy is “very effective” and they “strongly oppose” or “no support” a 100% smoke-free campus policy. Therefore H1B, faculty who believe that the current CSUN smoking policy is ineffective are more supportive of a 100% smoke-free campus than faculty who believe the current smoking policy is effective.

**H2:** Students who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% tobacco-free campus than students who believe the current smoking policy is effective.

Results yielded statistically significant among students with  $p < 0.05$ . A total of 192 students (52.4%) indicated they either “strongly support” or “support” a 100% tobacco-free campus policy. Thus, 89 students (24.3%) responded as “neutral” and a total of 85 students (23.3%) identified they either “strongly oppose” or “no support” for a 100% tobacco-free campus policy. Students who reported they “strongly oppose” or “no support” for a 100% tobacco-free campus policy are considered laggards in the Theory of Diffusion of Innovations (Rodgers, 1962). These students are usually the last to adopt an innovation (Rodgers, 1962). Consequently, 77 students (21.1%) identified the current CSUN smoking policy is “ineffective” and either “strongly support” or “support” a 100% tobacco-free campus policy. In contrast, 85 students (23.2%) indicated the current CSUN smoking policy is “very effective” and they “strongly oppose” or “no support” for a 100% tobacco-free campus policy. Therefore for H2, students who believe that the

current CSUN smoking policy is ineffective are more supportive of a 100% tobacco-free campus than students who believe the current smoking policy is effective.

**H2A:** Staff who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% tobacco-free campus than staff who believe the current smoking policy is effective.

Results yielded statistically significant among staff with  $p < 0.05$ . A total of 141 staff (58%) indicated they either “strongly support” or “support” a 100% tobacco-free campus policy. Further, 36 staff (14.8%) responded as “neutral” and a total of 66 staff (27.1%) identified they either “strongly oppose” or “no support” for 100% tobacco-free campus policy. The staff who were neutral in regards to a 100% tobacco-free policy are considered to be in the late majority category of the Theory of Diffusion of Innovations (Rodgers, 1962). Staff who fall into the late majority category usually adopt an innovation after the average member of society (Rodgers, 1962). These individuals approach an innovation with a higher degree of skepticism and after the majority of society has adopted the innovation (Rodgers, 1962). Consequently, 69 staff (28.4%) reported the current CSUN smoking policy is “ineffective” and either “strongly support” or “support” a 100% tobacco-free campus policy. In contrast, 21 staff (8.6%) indicated the current CSUN smoking policy is “very effective” and they “strongly oppose” or “no support” for a 100% tobacco-free policy. Therefore for H2A, staff who believe that the current CSUN smoking policy is ineffective are more supportive of a 100% tobacco-free campus than staff who believe the current smoking policy is effective.

**H2B:** Faculty who believe the current CSUN smoking policy is ineffective will be more supportive of a 100% tobacco-free campus than faculty who believe the current smoking policy is effective.

Results yielded statistically significant among faculty with  $p < 0.05$ . A total of 116 faculty (59.2%) indicated they either “strongly support” or “support” a 100% tobacco-free campus policy. Additionally, 33 faculty (16.8%) responded as “neutral” and a total of 44 faculty (23.9%) indicated they either “strongly oppose” or “no support” for 100% tobacco-free campus policy. Consequently, 51 faculty (26.1%) reported the current CSUN smoking policy is “ineffective” and either “strongly support” or “support” a 100% tobacco-free campus policy. In contrast, 21 faculty (10.7%) identified the current CSUN smoking policy is “very effective” and they “strongly oppose” or “no support” for a 100% tobacco-free policy. Therefore, for H2B, faculty who believe that the current CSUN smoking policy is ineffective are more supportive of a 100% tobacco-free campus than faculty who believe the current smoking policy is effective.

Hypotheses H1, H1A, H1B, H2, H2A, and H2B measured the opinion of students, staff and faculty regarding the current CSUN smoking policy and the correlation of support for a stronger tobacco control policy on campus. Research shows that college years have been characterized as a period of increased risk of smoking initiation as well as progressing from intermittent or social smoking to more regular patterns of use (Chuang & Hung-Song-Lih, 2011). Thus, evaluating opinions regarding tobacco control policies can help college administrators and tobacco control advocates implement appropriate prevention and control programs on college campuses. Most students surveyed were in favor of having a 100% smoke-free or a 100% tobacco-free

campus policy. Faculty and staff were also supportive of adopting a stronger policy in the form of 100% smoke-free or 100% tobacco-free campus policy. Students, staff and faculty indicated that the current CSUN smoking policy is not effective and thus were more supportive of either a 100% smoke-free or 100% tobacco-free campus policy. In another similar study that was conducted, a majority of students (453 or 57.8%) supported the university's decision to go tobacco-free while 24.5% (192) did not support the policy; and 17.7% (139) students did not have a strong opinion about the policy (Niles & Barbour, 2011).

**H3:** Students who use tobacco products (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% smoke-free campus policy than students who do not use tobacco products.

Results yielded statistically significant among students with  $p < 0.05$ . It was reported that 293 students (80.1%) indicated that they are not tobacco users while 73 students (19.9%) indicated they used tobacco products within the last 30 days. Subsequently, 212 students (57.9%) who were classified as non-tobacco users reported they either “strongly support” or “support” a 100% smoke-free campus policy. Additionally, 46 students (12.6%) who are non-tobacco users and 14 students (3.8%) classified as tobacco users identified they were “neutral” to a 100% smoke-free campus policy. Further, 27 students (8.7%) who are tobacco users indicated they either “strongly support” or “support” a 100% smoke-free campus policy. Lastly, 32 students (8.7%) who are tobacco users responded they “strongly oppose” or “no support” for a 100% smoke-free campus policy. Therefore for H3, students classified as tobacco users were less likely

to support a 100% smoke-free campus policy than students who indicated they had not used any tobacco products within the last 30 days.

**H3A:** Staff who use tobacco products (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% smoke-free campus policy than staff who do not use tobacco products.

Results yielded statistically significant among staff with  $p < 0.05$ . A total of 221 staff (91.0%) indicated that they are not tobacco users while 22 staff (9.0%) indicated they used tobacco products within the last 30 days. Subsequently, 169 staff (70.9%) who were classified as non-tobacco users identified they either “strongly support” or “support” a 100% smoke-free campus policy. Additionally, 17 staff (7.0%) who are non-tobacco users and 3 staff (1.2%) classified as tobacco users reported they were “neutral” to a 100% smoke-free campus policy. Further, 5 staff (2.0%) classified as tobacco users indicated they either “strongly support” or “support” a 100% smoke-free campus policy. Lastly, 14 staff (5.7%) who are tobacco users responded they either “strongly oppose” or “no support” for a 100% smoke-free campus policy. Therefore, for H3A staff classified as tobacco users were less likely to support a 100% smoke-free campus policy than staff who indicated they had not used any tobacco products within the last 30 days.

**H3B:** Faculty who use tobacco products (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% smoke-free campus policy than faculty who do not use tobacco products.

Results did not yield statistically significant among faculty with  $p > 0.05$ . A total of 186 faculty (94.9%) identified themselves as non-tobacco users while 10 faculty (5.1%) indicated they used tobacco products within the last 30 days.

Subsequently, 142 faculty (72.4%) who were classified as non-tobacco users reported they either “strongly support” or “support” a 100% smoke-free campus policy. Additionally, 14 faculty (7.1%) who are non-tobacco users and 2 faculty (1.0%) classified as tobacco users indicated they were “neutral” to a 100% smoke-free campus policy. Further, 4 faculty (3.3%) who are tobacco users responded they “strongly support” a 100% smoke-free campus policy. Lastly, 4 faculty (2.0%) who are tobacco users reported either they “strongly oppose” or “no support” for a 100% smoke-free campus policy. Therefore, for H3B faculty who were classified as tobacco users were not less likely to support a 100% smoke-free campus policy when compared with faculty who were non-tobacco users. Since there were 10 faculty who indicated they were tobacco users, the level of support was tied between “strongly support” and “strongly oppose”. No significance was proven since the results did not show a difference between the two groups.

**H4:** Students who use tobacco products on campus (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% tobacco-free campus policy than students who do not use tobacco products.

Results yielded statistically significant among students with  $p < 0.05$ . As previously mentioned, 293 students (80.1%) indicated that they are not tobacco users while 73 students (19.9%) indicated tobacco use in the last 30 days. Subsequently, 174 students (47.6%) who were classified as non-tobacco users reported they either “strongly support” or “support” a 100% tobacco-free campus policy. It was also shown that 46 students (12.6%) who were non-tobacco users identified either “strongly oppose” or “no support” for a 100% tobacco-free campus policy. Additionally, 73 students (19.9%) who

are non-tobacco users and 16 students (4.4%) classified as tobacco users indicated they were “neutral” to a 100% tobacco-free campus policy. Further, 18 students (5.0%) who are tobacco users responded they either “strongly support” or “support” a 100% tobacco-free campus policy. Lastly, 39 students (10.7%) who are tobacco users identified either they “strongly oppose” or “no support” for a 100% tobacco-free campus policy.

Therefore for H4, students classified as tobacco users were less likely to support a 100% tobacco-free campus policy than students who indicated they had not used any tobacco products within the last 30 days.

**H4A:** Staff who use tobacco products on campus (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% tobacco-free campus policy than staff who do not use tobacco products.

Results yielded statistically significant among staff with  $p < 0.05$ . As previously mentioned, 221 staff (91.0%) indicated that they are not tobacco users while 22 staff (9.0%) indicated tobacco use in the last 30 days. Subsequently, 138 staff (57.0%) classified as non-tobacco users reported they either “strongly support” or “support” a 100% tobacco-free campus policy. It was also shown that 51 staff (23.0%) who were non-tobacco users responded they either “strongly oppose” or “no support” for a 100% tobacco-free campus policy. Additionally, 32 staff (13.1%) who were identified as non-tobacco users and 36 staff (14.8%) classified as tobacco users indicated they were “neutral” to a 100% tobacco-free campus policy. Further, 3 staff who are tobacco users (1.2%) responded they “support” a 100% tobacco-free campus policy. Lastly, 15 staff (6.2%) who are tobacco users identified they either “strongly oppose” or “no support” for a 100% tobacco-free campus policy. Therefore for H4A, staff who were classified as

tobacco users were less likely to support a 100% tobacco-free campus policy than staff who indicated they had not used any tobacco products within the last 30 days.

**H4B:** Faculty who use tobacco products on campus (cigarettes, cigars, smokeless tobacco, and pipes) will be less likely to support a 100% tobacco-free campus policy than faculty who do not use tobacco products.

Results did not yield statistically significant among faculty with  $p > 0.05$ . The  $p$ -value was calculated to be .153 showing no significance since  $p > 0.05$ . As previously mentioned, 186 faculty (94.9%) indicated that they are not tobacco users while 10 faculty (5.1%) indicated tobacco use in the last 30 days. Subsequently, 112 faculty (57.1%) who were classified as non-tobacco users identified they either “strongly support” or “support” a 100% tobacco-free campus policy. It was also shown that 44 faculty (22.4%) who were non-tobacco users reported they either “strongly oppose” or “no support” for a 100% tobacco-free campus policy. Additionally, 30 faculty (15.3%) who are non-tobacco users and 3 faculty (1.5%) classified as tobacco users responded they were “neutral” to a 100% tobacco-free campus policy. Further, 4 faculty classified as tobacco users (2.0%) marked they “strongly support” a 100% tobacco-free campus policy. Lastly, 3 faculty (1.5%) classified as tobacco users indicated they “strongly oppose” a 100% tobacco-free campus policy. Therefore for H4B, it was shown faculty classified as tobacco users were not less likely to support a 100% tobacco-free campus policy when compared with faculty who were non-tobacco users. Since there were only 10 faculty who indicated they were tobacco users, the level of support was tied between “strongly support” and “strongly oppose”. No significance was proven since the results did not show a difference between the two groups.

Hypotheses H3, H3A, H3B, H4, H4A, and H4B measured the correlation between student, staff and faculty tobacco use behavior and their level of support for stronger tobacco control policies. Using policies such as smoke-free environments are considered a “high impact public health intervention” (HHS, 2012). Throughout the years there have been many positive correlations regarding smoke-free policies in the workplace as an effective way to help workers quit smoking (Bauer, Hyland, Li, Steger, & Cummings, 2005). If this level of impact applies to colleges students, staff and faculty within college campuses then these findings suggest that the potential impacts may be substantial and will greatly reduce the number of individuals who use tobacco products (Lee et al., 2010). By adopting and implementing stronger tobacco control policies, college campuses such as CSUN can reach the Healthy Campus 2020 goal of bringing the smoking rate down from 16% to 14% (American College Health Association, 2012).

Building on prior findings, it has become evident that smoke-free campus policies are effective at reducing cigarette usage on campus while promoting broad normative changes (Lee et al., 2010). More importantly, tobacco-free policies may be particularly effective given that many college students are social, light or intermittent smokers (Lee et al., 2010). Adoption of tobacco-free campus policies at colleges and universities can be highly successful with multilevel interventions on campuses which will decrease the initiation and usage of tobacco (Lee et al., 2010). There were 131 (16.27%) participants that indicated they were tobacco users. These participants can greatly benefit by changing their tobacco use behavior if CSUN adopts and implements a stronger tobacco control policy on campus.

**H5:** Students who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% smoke-free campus policy than students who are never exposed to secondhand smoke on campus.

Results did not yield statistically significant among students with  $p>0.05$ . The  $p$ -value was calculated to be .069 showing no significance since  $p>0.05$ . Results showed that 43 students (11.8%) indicated they are exposed to secondhand smoke “multiple times a day on campus”. Additionally, 50 students (13.7%) identified they are exposed “every day”, while 124 students (34.1%) reported they are exposed a “few times a week” to secondhand smoke on campus. Additionally, 104 students (28.6%) responded they are exposed a few times a month and 43 students (11.8%) selected that they are “never” exposed to secondhand smoke on campus. Most students indicated that they are exposed to secondhand smoke a “few times a week” and identified they either “strongly support” or “support” a 100% smoke-free campus policy. It is also important to mention that a total of 66 students (18.2%) reported they are exposed to secondhand smoke a “few times a month” on campus and marked “strongly support” or “support” for a 100% smoke-free campus policy. Thus, for H5 it was shown not to be significant because students who indicated their exposure to secondhand smoke was either “a few times a month” or “never” were also supportive of a 100% smoke-free campus policy.

**H5A:** Staff who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% smoke-free campus policy than staff who are never exposed to secondhand smoke on campus.

Results yielded statistically significant results among staff with  $p<0.05$ . The results identified 31 staff (12.8%) who indicated they are exposed to secondhand smoke

“multiple times a day” on campus. Additionally, 41 staff (16.9%) identified they are exposed “every day” while 56 staff (23.0%) reported they are exposed a “few times a week” to secondhand smoke on campus. Additionally, 83 staff (34.2%) responded they are exposed a “few times a month” and 32 staff (13.2%) marked that they are “never” exposed to secondhand smoke on campus. A majority of staff indicated that they are exposed to secondhand smoke a “few times a week” or a “few times a month” and that they either “strongly support” or “support” a 100% smoke-free campus policy. Thus, H5A was shown to be significant. Staff who indicated they are exposed to secondhand smoke a “few times a week” or more on campus are more supportive of a 100% smoke-free campus policy; when compared to staff who are never exposed to secondhand smoke on campus.

**H5B:** Faculty who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% smoke-free campus policy than faculty who are never exposed to secondhand smoke on campus.

Results yielded statistically significant among faculty  $p < 0.05$ . The results identified 25 faculty (12.8%) who indicated they are exposed to secondhand smoke “multiple times a day” on campus. Additionally, 27 faculty (13.8%) identified they are exposed “every day”, while 52 faculty (26.5%) reported they are exposed a “few times a week” to secondhand smoke on campus. Next, 52 faculty (26.5%) responded they are exposed a “few times a month” and 40 faculty (20.4%) expressed that they are “never” exposed to secondhand smoke on campus. A majority of faculty reported that they are exposed to secondhand smoke a “few times a week” or a “few times a month” and that they either “strongly support” or “support” a 100% smoke-free campus policy. Thus,

H5B was proven to be significant. Faculty who indicated they are exposed to secondhand smoke exposure a “few times a week” or more on campus are more supportive of a 100% smoke-free campus policy; when compared to faculty who are never exposed to secondhand smoke on campus.

**H6:** Students who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% tobacco-free campus policy than students who are never exposed to secondhand smoke on campus.

Results yielded statistically significant results among students with  $p < 0.05$ . As previously discussed, results showed that 43 students (11.8%) indicated they are exposed to secondhand smoke “multiple times” a day on campus. It was also reported that 50 students (13.7%) identified they are exposed “every day” while 124 students (34.1%) reported they are exposed a “few times a week” to secondhand smoke on campus. Additionally, 104 students (28.6%) marked they are exposed a “few times a month” and 43 students (11.8%) specified that they are “never” exposed to secondhand smoke on campus. Further, 57 students (15.6%) responded they are exposed to secondhand smoke a “few times a week” on campus and identified they either “strongly support” or “support” a 100% tobacco-free campus policy. Subsequently, 30 students (8.2%) indicated they are exposed to secondhand smoke a “few times a month” and identified they either “strongly oppose” or “no support” a 100% tobacco-free campus policy. Thus, H6 was revealed to be significant. Students who indicated they are exposed to secondhand smoke exposure a “few times a week” or more on campus are more supportive of a 100% tobacco-free campus policy; when compared to students who are never exposed to secondhand smoke on campus.

**H6A:** Staff who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% tobacco-free campus policy than staff who are never exposed to secondhand smoke on campus.

Results yielded statistically significant among staff  $p < 0.05$ . As previously mentioned, the results identified 31 staff (12.8%) who indicated they are exposed to secondhand smoke “multiple times a day” on campus. It was also reported that 41 staff (16.9%) indicated they are exposed “every day” while 56 staff (23.0%) responded they are exposed a “few times a week” to secondhand smoke on campus. Additionally, 83 staff (34.2%) marked they are exposed a “few times a month” and 32 staff (13.2%) identified that they are “never” exposed to secondhand smoke on campus. Further, 35 staff (14.4%) indicated they are exposed to secondhand smoke “every day” and identified either they “strongly support” or “support” a 100% tobacco-free campus policy. It is also significant to mention that 32 staff (13.6%) indicated they are exposed to secondhand smoke a “few times a month” and selected they either “strongly oppose” or “no support” for a 100% tobacco-free campus policy. Thus, H6A was shown to be significant. Staff who indicated they are exposed to secondhand smoke a “few times a week” or more on campus are more supportive of a 100% tobacco-free campus policy; when compared to staff who are never exposed to secondhand smoke on campus.

**H6B:** Faculty who indicate that they are exposed to secondhand smoke more than a few times a week or more on campus; will be more in support of a 100% tobacco-free campus policy than faculty who are never exposed to secondhand smoke on campus.

Results yielded statistically significant among faculty  $p < 0.05$ . As previously mentioned, the results identified 25 faculty (12.8%) who indicated they are exposed to

secondhand smoke “multiple times a day” on campus. It was also reported that 27 faculty (13.8%) identified they are exposed “every day” while 52 faculty (26.5%) reported they are exposed a “few times a week” to secondhand smoke on campus. Additionally, 52 faculty (26.5%) responded they are exposed a “few times a month” and 40 faculty (20.4%) identified that they are “never exposed” to secondhand smoke on campus. Consequently, 31 faculty who reported they were exposed to secondhand smoke on campus a “few times a week” indicated that they either “strongly support” or “support” a 100% tobacco-free campus policy. In contrast, 21 faculty (10.7%) who responded they were exposed a “few times a month” to secondhand smoke on campus indicated that they either “strongly oppose” or “no support” for a 100% tobacco-free campus policy. Thus, H6B was found to be significant. Faculty who indicated they are exposed to secondhand smoke more than a “few times a week” or more on campus are more supportive of a 100% tobacco-free campus policy; when compared to faculty who are never exposed to secondhand smoke on campus.

Hypotheses H5, H5A, H5B, H6, H6A, and H6B measured the amount of secondhand smoke exposure on campus from students, faculty and staff in correlation with their support for stronger tobacco control policies. As previously discussed, there is no risk-free level of exposure to secondhand smoke (CDC, 2006). Secondhand smoke is classified as a group A carcinogen, the most dangerous type of carcinogen and thus puts everyone at risk including non-smokers (CDC, 2006). Smoking on campus not only affects the individual health but exposes others to secondhand smoke. Consequently, adopting and implementing a smoke-free or tobacco-free campus will eliminate secondhand smoke exposure on college campuses such as CSUN. The results of the

survey showed that students, staff and faculty are exposed to secondhand smoke while on campus. Participants were supportive of either a 100% smoke-free or 100% tobacco-free campus policy when their exposure to secondhand smoke was more frequent. It was also shown that students who were not exposed as frequently to secondhand smoke on campus were still supportive of a 100% smoke-free campus policy.

### **Limitations**

There are several limitations to this study that may prove as a useful guide for future research efforts with this population. The sample had a skewed ethnic distribution for the CSUN campus with slightly more than 46% Caucasian participants. As mentioned earlier, the top four ethnicities at CSUN include 35.30% Hispanic, 29.2% Caucasian, 11.40% Asian/Pacific Islander and 6.1% Black/African American (CSUN Office of Institutional Research , 2012). Although the results are skewed for the ethnic distribution at CSUN, other college campuses who meet the demographic characteristics may be able to generalize the results of the study. However, these results cannot be generalized to other college campuses across the United States if they do not resemble the ethnic distribution that has been presented with this research.

The sample size was based on the participants that volunteered to take the survey and a low internal validity threat is assumed due to the selection of participants. The participants in the survey consisted of students, faculty, and staff. Participants may have had certain characteristics that predisposed them to certain outcomes. Although the sample was collected randomly, the low internal validity still applies to this study. Since the entire CSUN community was not sent the survey, the results do not include the entire

population of CSUN. Participants consisted of those who chose to anonymously participate in the survey.

Next, the surveys were self-reported and there are limitations in regards to accurate reporting by participant. Under-reporting for questions may have occurred by participants. Participants may have not accurately reported various questions pertaining to their tobacco use behavior or their knowledge of the current smoking policy on the CSUN campus. Another limitation is non-participation due to the content of the survey instrument. There may have been a high number of potential participants who refrained from participating in the survey due to their tobacco use behavior. There were 131 participants that indicated they had used tobacco products within the last 30 days of being surveyed. However, other participants who may have also been tobacco-users may not have indicated their tobacco use behavior or refrained from participating in the survey based on the topic. Further, observer effect applies to the limitations of this study. Observer effect applies to this study because the survey instrument used in this research is associated with COUGH-Northridge and the author is affiliated with COUGH-Northridge. As a result, participants may improve or modify an aspect of their behavior in which they know is being studied as part of this research study.

Chapter 6 will cover a summary of the project and implications for public health based on the results. A final conclusion and recommendations for future research will also be discussed.

## CHAPTER 6: CONCLUSION

This chapter will summarize the thesis project, discuss implications for public health, provide conclusions that emerged from the study, and suggest recommendations for future research.

### Summary

Research has shown that evaluating college students opinions regarding tobacco control polices can help college administrators and tobacco control advocates implement stronger tobacco control policies. The purpose of this study was to examine students, staff and faculty attitudes towards the current CSUN smoking policy and their preferences regarding stronger tobacco control policies on campus. Next, the study examined student, staff, and faculty exposure to secondhand smoke on the CSUN campus. Lastly, the study examined students, staff and faculty tobacco use behavior. A pilot test was conducted on the first version of the research instrument. After the pilot test, the instrument was revised in order to improve the questions and scales. The survey was administered to participants online and by paper copy. The sample consisted of a total of 805 students, staff and faculty participants.

From the study, 131 (16.3%) participants indicated that they had used tobacco within the last 30 days, classifying them as tobacco users. Students, faculty and staff indicated that the CSUN smoking policy was ineffective. Thus, there was more support for a 100% smoke-free and 100% tobacco-free campus policy. The two most effective policies a college can adopt are 100% smoke-free and 100% tobacco-free campus policies. A 100% smoke-free policy prohibits smoking in all indoor and outdoor locations on college campuses including parking lots (ANR, 2013). A more comprehensive policy

is a 100% tobacco-free campus policy, which prohibits the use of all tobacco products including smoke-emanating and smokeless tobacco products (ANR, 2013).

The study also showed that students and staff who reported they had used tobacco products within the last 30 days were less supportive of a 100% smoke-free and 100% tobacco-free campus policy. Since there were 10 faculty who indicated they were tobacco users, the level of support was tied between “strongly support” and “strongly oppose” for both a 100% smoke-free and 100% tobacco-free campus policy. Of particular interest, it was found that students who indicated their exposure to secondhand smoke was either “a few times a month” or “never” were more supportive of a 100% smoke-free campus policy when compared with students who indicated that they were exposed a “few times a week” or more. On the other hand, staff and faculty who indicated they are exposed to secondhand smoke more than a “few times a week” or more on campus were more supportive of a 100% smoke-free campus policy. Furthermore, students, staff and faculty who indicated they are exposed to secondhand smoke a “few times a week” or more on campus were more supportive of a 100% tobacco-free campus policy when compared to students, staff, and faculty who are never exposed to secondhand smoke on campus.

### **Implications for Public Health**

The following implications for public health were concluded by the author based upon the results of the study.

1. Smoking is a major public health concern since tobacco-related diseases and deaths are preventable. Every year smoking related illnesses kills approximately 443,000 Americans (HHS, 2012). The economic burden of cigarette use is \$193 billion annually in health care costs and lost productivity (CDC, 2011). Thus, prevention and

- tobacco-control efforts for students who are in college should be a national public health priority. With stronger tobacco control policies on college campuses, students will be less likely to start using tobacco products and will be more successful in quitting (Seo, Macy, Torabi, & Middlestadt, 2011). Colleges in collaboration with public health officials have a unique opportunity to reduce morbidity and mortality, protect the environment, and set new societal norms through tobacco-free policy implementation. CSUN administrators and officials also have a responsibility to adopt and enforce strong tobacco-free policies in order to provide a healthy, productive and safe environment for students, staff, faculty, guests, and visitors.
2. Secondhand smoke costs more than \$10 billion in health care expenditures and expenses due to morbidity and mortality in the United States (CDC, 2011). Every year, 88 million non-smokers are exposed to secondhand and thirdhand tobacco smoke (HHS, 2012). The study concluded that secondhand smoke exposure is a problem at CSUN. As research has shown, there is no risk-free level of exposure to secondhand tobacco smoke. Students, staff, faculty guests and visitors are constantly exposed to this carcinogen. Numerous studies show that smoke-free policies reduce secondhand smoke and the prevalence of smoking (Berg, et al., 2011). California has been a pioneer for the smoke-free movement, establishing the first statewide smoke-free workplace law in 1998 (California Tobacco Control Program, 2012).

Public health officials need to put more focus and emphasis on the young adult population and the dangers of secondhand smoke. By focusing on this population, public health officials can successfully decrease the prevalence of tobacco use while decreasing the amount of secondhand smoke exposure. Implementing and enforcing

100% smoke-free or 100% tobacco-free campus policies across college campuses in the United States greatly decreases secondhand smoke exposure to everyone in the campus community. The same applies when CSUN implements and enforces a 100% smoke-free or 100% tobacco-free campus policy.

3. The results of this study contribute to the literature review in regards to the importance of tobacco control policies in college campuses. By adopting and implementing stronger tobacco control policies, college campuses such as CSUN can reach the Healthy Campus 2020 goal of bringing the smoking rate down from 16% to 14% (American College Health Association, 2012).

## **Conclusions**

The following conclusions were drawn by the author based upon the results described previously in the study.

1. The objectives of the study were to assess the knowledge, attitudes, and beliefs of the CSUN community (students, staff, and faculty) on the current campus smoking policy. Further, opinions regarding developing a 100% smoke-free and 100% tobacco-free campus policy were measured. More participants filled out the online version of the survey instrument since it was easier to access.
2. Of the 805 participants, a total of 131 (16.3%) identified themselves as tobacco users. These participants indicated that they used tobacco products within the last 30 days of when they participated in the survey. The number of tobacco users is large, considering the sample size of 805 participants. When compared with the California adult smoking rate of 12.7%, CSUN has a higher rate of tobacco users (California Tobacco Control Program, 2012). Tobacco use remains the leading cause of

preventable death and disease in the United States (HHS, 2012). Reports have shown that on average, smokers die 13 to 14 years earlier than nonsmokers (CDC, 2006).

CSUN tobacco users are at risk for developing a variety of diseases and illnesses that are caused by tobacco usage. Subsequently, stronger tobacco control policies should be implemented and enforced in order to decrease tobacco use among the CSUN community.

3. Students, staff and faculty believe that the current smoking policy is ineffective and showed strong support for a 100% smoke-free and 100% tobacco-free campus policy. The strong support for both a 100% smoke-free and 100% tobacco-free campus policy should be reassurance for university administrators who may be concerned about strong opposition to implementing a more comprehensive tobacco-free campus policy. Since students are the paying clients, their opinion should have a strong impact on implementing either a 100% smoke-free or 100% tobacco-free campus policy.

### **Recommendations for Future Research**

The present study focused on gathering data from students, staff, and faculty at CSUN regarding the current smoking policy and adopting stronger tobacco control policies on campus. Students, staff and faculty were selected as the research sample because they consist of the population of the CSUN community. Recommendations for future research include measuring participants' level of tobacco use and their level of support for tobacco-free campus policies. This will measure the amount of support based on the amount of tobacco used by the participant. For instance, results can compare the level of support of daily tobacco users' verses non-daily tobacco users. Additionally,

amount of support can also be measured by tobacco users who have attempted or considered quitting. Next, future research can assess participants' level of knowledge of secondhand smoke and their level of support for tobacco-free campus policies. This would look into participants who are more aware of the dangers of secondhand smoke and whether they are more likely to support tobacco-free policies. Longitudinal data should be collected on students, faculty and staff throughout all phases of policy change and implementation.

Further, recommendations for future research would be to survey administrators to see what factors are restricting policy changes within college campuses. This can be a national study in which administrators will identify what factors are preventing them from enforcing stronger tobacco control policies on their college campuses. The study can also look at the trends between different university systems and their rationale for the smoking policy. When a smoke-free or tobacco-free policy is enforced, data should be collected in regards to compliance of the policy and measure participants' responses to how effective they believe the new policy is on campus. This will help to better improve enforcement and compliance when either a 100% smoke-free or 100% tobacco-free campus policy are enforced and implemented on the CSUN campus.

In conclusion, public health has an important role in tobacco control policies on college campuses. College campuses are associated with places of leadership, learning, enlightenment, change and good health. Tobacco free environments are considered a high impact public health intervention in college campuses. Implementing and enforcing stronger tobacco control policies on campus will help reduce the tobacco usage rate within the young adult population. Most importantly a strong tobacco use policy on

college campuses decreases the health disparities associated with tobacco use and promotes student success. The data collected within the CSUN community shows that the current smoking policy on campus is ineffective. Further, there is strong support for stronger tobacco control policies. The large amount of support for a stronger more effective tobacco policy on campus should be reassurance for the university administrators to work towards implementing and enforcing a stronger tobacco control policy at CSUN.

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## Appendix A

9

### HUMAN SUBJECTS PROTOCOL APPROVAL FORM CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

This Protocol Approval Form must be completed for all California State University, Northridge faculty and student research which involves human subjects. Additional material(s), as described below, must be attached to this form at the time it is submitted to the Standing Advisory Committee for the Protection of Human Subjects (SACPHS) in the Office of Research and Sponsored Projects (UH 265, ext. 2901). In ALL cases, **RESEARCH MAY NOT PROCEED** until authorized by the Committee. You will be notified of the action of the Committee following the receipt of an original and nine copies of this form and all required supplementary information (see below) in the Office of Research and Sponsored Projects. ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION. Brief, excerpted definitions and guidelines regarding research involving human subjects appear on the attached instructions. For a copy of complete regulations, contact the Office of Research and Sponsored Projects. Read all instructions before completing the form. ONLY TYPEWRITTEN FORMS WILL BE ACCEPTED.

1. Title of research CSUN Faculty, Students, and Staff preference for tobacco control policies: Compliance and support for smoke-free school policies.
2. Name of researcher(s) Charleen Mikail Campus ext. \_\_\_\_\_ Major or Department Health Science
3. Address 23028 Peacock Court Home phone 818-359-1968  
Calabasas, CA 91302 Email Address Charleen.Mikail.76@my.csun.edu
4. Name of Faculty Advisor Dr. Kathleen J. Young Faculty Advisor ext. 4725
5. Period of Project (see pg. 1-Itemized Instructions) From Fall 2012 To Spring 2013
6. Check one:  Faculty Research  Student thesis  Other (specify) \_\_\_\_\_  
Course prefix and number HSCI 698C Course title Thesis/Graduate Project
7. Check one:  Unfunded  Funded \_\_\_\_\_ Date (to be) submitted May 2013
8. History of Protocol:  New  Renewal Approval Date Spring 2010
9. Does this protocol contain modification(s) from a previously approved protocol?  Yes (explain)  No  N/A  
Instrument questions have been modified from previously approved protocol. Additional questions added: question number 4, 5, 6, 8, 9, 10 and 11. Deletion of question number 16.  
Questions have been re-arranged in modification of the instrument.  
Additional resources for quitting smoking have been provided at the end of the instrument.  
Additional category for administration has been added as choice for status in section of background information.  
Age question on background information has become fill in option instead of category.
10. Special procedures: (give detailed description on separate sheet)  
 Radioactive materials  Drug(s), Specify: \_\_\_\_\_
11. Is a Subject Bill of Rights attached?  Yes  No
12. Are copies of any questionnaire(s), survey instrument(s) and/or interview schedule(s) referred to in this protocol statement attached?  Yes  No
13. Is draft Informed Consent Form(s) attached?  Yes  No 14. Is a letter of permission attached?  Yes  No
15. SIGNATURES: Refer to page 1, General Instructions—letter D, before signing.

Signature of Faculty Researcher or Student Advisor	Date	Student Investigator's Signature (specify grad. or undergrad.)	Date
FOR SACPHS AND RESEARCH OFFICE USE ONLY			
<input checked="" type="checkbox"/> Exempt, minimal risk	<input type="checkbox"/> Approved, expedited review	<input type="checkbox"/> See attached memo	
<input type="checkbox"/> Not approved, see attached memo	<input type="checkbox"/> Approved, reasonable risk	<input type="checkbox"/> Not approved, see attached memo	


2/27/13

Revised 2/08

## APENDIX B



February 1, 2013

Dear Ms. Mikail,

Please consider this letter our written approval to use the CYAN survey instrument on college tobacco use and smoke-free university policies. I have reviewed the revised version of the California State University Northridge survey and have no recommended changes or comments. If you have any further needs in regards to the instrument, please let me know.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Kimberlee Vagadori'.

Kimberlee Homer Vagadori, MPH  
Project Director

(916) 339-3424 x22  
[kim@cyanonline.org](mailto:kim@cyanonline.org)

# APPENDIX C

## CSU Northridge COUGH-Northridge Faculty, Staff, and Student Current Tobacco Policy Opinion Survey

You are invited to take part in a survey conducted by CSUN Campus's Organized and Unified for Good Health (COUGH-Northridge). In this survey we hope to learn about your views on tobacco, secondhand smoke, the current tobacco policies on this campus and your opinion about advancing the current 20 ft policy to designated areas in parking lots. **Your participation in this survey is completely voluntary and confidential.** Confidential means that there is no identifier or personal information requested so please remember to not identify yourself on the survey. Reports resulting from this survey will not identify you as a participant so (please) feel free to answer honestly. An overall summary of survey results will be made available and shared with the campus.

**Please respond by marking the box of each statement with a ✓ or an X.**

1. Do you smoke?  Yes  No (If no skip to question number 8)
2. During the past 30 days, on how many days did you use:
- |                                | 0 days                   | 1-2                      | 3-5                      | 6-9                      | 10-19                    | 20-29                    | All 30 days              |
|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Cigarettes                     | <input type="checkbox"/> |
| Cigars                         | <input type="checkbox"/> |
| Smokeless Tobacco (e.g., chew) | <input type="checkbox"/> |
| Pipes (e.g., hookah)           | <input type="checkbox"/> |
3. If you smoke, do you smoke on campus?  Yes  No
4. If yes, where do you usually smoke on campus? (check all that apply)  
 Walkways  Parking Lots  Outside buildings  Other: \_\_\_\_\_
5. If you chew tobacco, do you chew tobacco on campus? Yes  No  N/A
6. In the past 12 months, have you stopped using tobacco for 1 day or longer because you were trying to quit?  
 Yes  No  N/A
7. If yes, how many times in the past 12 months did you quit using tobacco?  
 1  2  3 or more
8. Secondhand smoke is smoke from someone else's cigarette, cigar or pipe that you breathe. Reflecting on the current semester, how often would you say you are exposed to secondhand smoke on campus?  
 Multiple times a day  
 Every day  
 A few times a week  
 A few times a month  
 Never
9. Would you say secondhand smoke on campus typically bothers you a lot, a little, not at all?  
 A lot  A little  Not at all
10. Have you experienced any immediate health effects from secondhand smoke on campus such as coughing, wheezing, or allergic reaction?  Yes  No  N/A

**Please turn over to continue**

**Do you agree or disagree with the following statements?**

- |  | Strongly<br>Agree        | Somewhat<br>Agree        | No<br>Opinion            | Somewhat<br>Disagree     | Strongly<br>Disagree     |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 11. Smoking is hazardous to one's health.  | <input type="checkbox"/> |
| 12. Secondhand smoke can cause serious health problems.  | <input type="checkbox"/> |
| 13. Daily exposure to small amounts secondhand smoke is of a serious health risk.  | <input type="checkbox"/> |
| 14. It is okay for colleges to limit smoking on campus in order to keep secondhand smoke away from other students and staff.   | <input type="checkbox"/> |
| 15. For people with certain health conditions (asthma, pregnancy, heart disease, cancer, etc.) exposure to secondhand smoke is harmful to their health.  | <input type="checkbox"/> |
| 16. Are you aware that CSU Northridge has a smoke-free policy that restricts smoking within 20-ft. of all buildings?<br><input type="checkbox"/> Yes <input type="checkbox"/> No                                 |                          |                          |                          |                          |                          |
| 17. Is the current smoke-free policy at CSU Northridge:<br><input type="checkbox"/> Very effective <input type="checkbox"/> Somewhat effective <input type="checkbox"/> Not effective/ineffective                |                          |                          |                          |                          |                          |
| 18. Would you support CSU Northridge becoming a "smoke-free campus with the exception of parking lots?"<br><input type="checkbox"/> Support <input type="checkbox"/> Neutral <input type="checkbox"/> No support |                          |                          |                          |                          |                          |
| 19. Would you support CSU Northridge becoming a "100% tobacco/smoke-free campus?"<br><input type="checkbox"/> Support <input type="checkbox"/> Neutral <input type="checkbox"/> No support                       |                          |                          |                          |                          |                          |
| 20. If you use tobacco, would you be interested in on-campus services to assist you with quitting?<br><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A                      |                          |                          |                          |                          |                          |
| 21. How long did it take you to complete the survey _____?   |                          |                          |                          |                          |                          |
| 22. For what purpose do you think this information will be used?<br>_____  |                          |                          |                          |                          |                          |
| 23. What problems (if any), did you have completing the survey?<br>_____   |                          |                          |                          |                          |                          |
| 24. Are the directions clear?<br>_____Yes                      _____No   |                          |                          |                          |                          |                          |

25. Are there any words or language in the instrument that people might not understand? If "yes" please state them: \_\_\_\_\_

26. Did you find any of the questions to be unnecessary or too sensitive? \_\_\_\_No  
\_\_\_\_If "Yes please state them: \_\_\_\_\_

27. Did the answer choices allow you to answer as you intended?  
\_\_\_\_Yes  
\_\_\_\_No

28. Is there anything you would change about this survey? If "yes" please list them:  
\_\_\_\_\_  
\_\_\_\_\_

29. Your gender:  Female  Male

30. Your age:  Under 18  18-19  20-24  25-29  
 30-39  40-49  50-59  60 and over

31. Status (primary):  Student  Staff  Faculty  Administration

32. Additional comments:

**Thank you for taking the time to complete this survey!**

## APPENDIX D

COUGH-Northridge  
Faculty, Staff, Administration and Student  
Current Tobacco Policy Opinion Survey

*You are invited to take part in a survey conducted by CSUN Campus's Organized and United for Good Health (COUGH-Northridge). Your participation in this survey is completely voluntary and confidential. Reports resulting from this survey will not identify you as a participant so please feel free to answer honestly. An overall summary of survey results will be made available and shared with the campus.*

**Please respond by marking the "( )" of each statement with a ✓ or an X.**

**Basic Information**

1. Status (primary): ( ) Student ( ) Staff ( ) Faculty ( ) Administration

If Student please indicate ( ) Under-Graduate Student ( ) Graduate Student

2. Your gender: ( ) Female ( ) Male

3. Would you describe yourself as:

( ) American Indian/Native American ( ) Asian ( ) Black/African American ( ) Hispanic/Latino

( ) White/Caucasian ( ) Middle-Eastern ( ) Pacific Islander ( ) Other: \_\_\_\_\_

4. Your age: \_\_\_\_\_

**Secondhand Smoke**

5. Secondhand smoke is smoke from someone else's cigarette, cigar or pipe that you breathe. Reflecting on the current semester, how often would you say you are exposed to secondhand smoke on campus?

( ) Multiple times a day

( ) Every day

( ) A few times a week

( ) A few times a month

( ) Never

6. How well do you agree or disagree with the following statement: "Secondhand smoke on campus bothers me".

( ) Strongly Agree ( ) Agree ( ) Neither Agree nor Disagree ( ) Disagree ( ) Strongly Disagree

7. Do you have an allergy/sensitivity (e.g., asthma, sneezing, watery eyes, etc.) that is triggered by exposure to either indoor and/or outdoor tobacco smoke?

( ) Yes

( ) No

8. Are you aware that CSU Northridge has a smoking policy that prohibits smoking within 20 to 25-ft. of buildings?

( ) Yes

( ) No

9. In your opinion, the current smoking policy at CSU Northridge is:

( ) Very effective ( ) Somewhat effective ( ) Neutral ( ) Not effective/ineffective ( ) Not sure

10. Would you support CSU Northridge becoming a "100% smoke-free campus?" (Smoking is prohibited on campus property including parking lots.)  
 Strongly Support     Support     Neutral     No Support     Strongly Oppose
11. Would you support CSU Northridge becoming a "100% tobacco -free campus?" (Prohibits the use of all tobacco products including smoke-emanating and smokeless products.)  
 Strongly Support     Support     Neutral     No Support     Strongly Oppose
12. What effect, if any do you think a policy making this campus completely smoke-free would have on student quality of life on campus? (Such as student learning and student enrollment)  
 Major Effect     Moderate Effect     Neutral     No Effect

**Tobacco Use**

13. During the past 30 days, on how many days did you use (If you did not use please indicate by marking 0):  
 Cigarettes: \_\_\_\_\_  
 Cigars: \_\_\_\_\_  
 Smokeless Tobacco (e.g., chew): \_\_\_\_\_  
 Pipes (e.g., hookah): \_\_\_\_\_  
*If you have not used tobacco in the last 30 days, please skip questions 13-17.*
14. If you smoke, do you smoke on campus?     Yes     No (*if no, skip to question 15*)
15. If yes, where do you usually smoke on campus? (check all that apply)  
 Walkways  
 Parking lots/structures  
 Outside buildings  
 Outside on-campus housing  
 Other: \_\_\_\_\_
16. In the past 12 months, have you stopped using tobacco for 1 day or longer because you were trying to quit?  
 Yes     No
17. If yes, how many times in the past 12 months did you quit using tobacco?  
 1     2     3 or more times

**Thank you for taking the time to complete this survey!**

***Additional Comments:***

**CSU Northridge students:** If you would like help to quit using tobacco, please call Janice Martin (818) 677-3685 to make a free and confidential appointment at the Klotz Student Health Center.

**Additional resources:**    1-800-NO-BUTTS    TobaccofreeCA.com  
 Smokefree.gov    smokefree.gov/smokefreetxt

## **APPENDIX E**

**SUBJECT: Online survey for CSUN Administrators, Faculty, and Staff**

Dear CSUN Administrators, Faculty Professors and Staff,

This e-mail is an invitation for you to participate in an anonymous online survey regarding your opinion of the current smoking policy on campus.

Since you have been selected randomly, your feedback is particularly important.

The survey will take just a few minutes to complete and your participation is greatly appreciated.

The direct link for the survey is:

[https://csunsbs.qualtrics.com/SE/?SID=SV\\_8hNgdaqpKXhFOkd](https://csunsbs.qualtrics.com/SE/?SID=SV_8hNgdaqpKXhFOkd)

For any questions regarding the study, please feel free to contact me directly.

Kindest Regards,

Charleen Mikail