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Rethinking Cannabis Legislation: Insights from Advocacy Groups

Christopher Hunter Tramel
University of Mississippi. Sally McDonnell Barksdale Honors College

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By:
Christopher Hunter Tramel

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Approved by

_____
Advisor: Dr. Mark Frezzo
Associate Professor of Sociology

_____
Reader: Dr. Thomas Garrett
Associate Professor of Economics

_____
Reader: Dr. Joseph Holland
Assistant Professor of Public Policy Leadership

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ABSTRACT

CHRISTOPHER HUNTER TRAMEL: *Rethinking Cannabis Legislation: Insights from Advocacy Groups*

Prohibition and regulation of substances in the United States transformed throughout the 20th century namely through the Pure Food and Drug Act, the prohibition of alcohol, the Marihuana Tax Stamp Act, and the Controlled Substances Act, with each further expanding the amount of substances regulated and the consequences of breaking the regulations. The first chapter will briefly outline major events and legislation from 1937 to the present day and how such events and legislation set the stage for grassroot initiatives on the state level seeking to take advantage of the medicinal properties of *Cannabis sativa* and its impact on relative incarceration rates throughout the era. The second chapter investigates the 'three qualifiers' necessary to be classified as a Schedule I controlled substance and challenges such with the findings of federal commissions, patents, and programs; similar medicines, and the surge in state-level acceptance as well as public support for the medicinal use of *Cannabis sativa*. The lack of settling of the Schedule I classification with regards to *Cannabis sativa* in the face of such legitimate findings has created an environment possibly violating provisions of the Fourth, Fifth, Eighth, Ninth, Tenth, and Fourteenth Amendments of the United States Constitution. Finally, this thesis will critically approximate the economic impact of the Schedule I classification of *Cannabis sativa* from the commencement of the Shafer Commission in 1972 to the present day. Such historic, social, and economic impacts around the "War on *Cannabis sativa*" are grounds proving the legitimacy of the movement of cannabis law reform seen in the modern landscape of the United States. Likewise, such findings should

act as evidence that the Schedule I classification of such is unconstitutional, unethical, and thwarted medical progressivism, freedom of choice, and treatment of fellow Americans since 1937.

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Introduction

The transition of condoning hemp and cannabis cannot be placed in one specific instance; however, the influx of immigrants that the Roaring Twenties encouraged is a starting point that makes even alcohol prohibition more clear. “Temperance organizations, religious groups, and civic clubs,” (Lee, *Smoke Signals,* p. 49), caused such things as the 18 Amendment to be ratified. Aligned by such temperance organizations and religious groups, Harry Jacob Anslinger “became US consul in Nassau, Bahamas; he was quickly recognized for his effective work in persuading British authorities to cooperate in curbing the flow of intoxicating beverages,” (King, 2001), into America. On July 1, 1930, Anslinger’s drug functions were shifted from the Department of State to the Federal Bureau of Narcotics (FBN); he was made acting commissioner of the FBN since its inception. On September 23, 1930, President Hoover made Anslinger’s appointment permanent.

The passing of the Volstead (1919) Act was aimed to control the distribution, importation, and production of alcohol and to enforce the 18th Amendment. The intended effect of the Volstead Act was to increase economic productivity during the American Great Depression. In fact, President Herbert Hoover described Prohibition as a “great social and economic experiment, noble in motive and far-reaching in purpose,” (Lerner, *PBS,* 2011). The intended purpose of such eradication of alcohol distribution is exemplified when Michael Lerner, historian from *PBS*, writes, “the expected sales of clothing and household goods were expected to skyrocket; thereby causing real estate values and rent prices to elevate from saloons closing and neighborhoods improving.”

The intended effects of Prohibition and the reality of Prohibition couldn't have been further apart. Lerner goes on to say, "Instead the unintended consequences proved to be a decline in amusement and entertainment industries across the board." The decline in these industries, "eliminated thousands of jobs for barrel makers, truckers, waiters and other related trades from the closing of breweries, distilleries, and saloons," (Lerner, 2011).

While the private sector of the economy did suffer from the banning of alcohol, the public sector, part of the economy controlled by the government, suffered much more dismally. Before Prohibition, many states relied heavily on excise tax to fund budgets for example, "in New York, almost 75 percent of the state's revenue was derived from liquor taxes," (Lerner, 2011). How do governments fund their budgets when up to 75 percent of lawful state tax base are made illegal?

Prohibition caused the need for the personal income tax. This is seen when Lerner states, "The most lasting consequence was that many states and the federal government would come to rely on income tax revenue [having become lawful with the ratification of the 16 amendment] to fund their budgets going forward." The decreased reliance of alcohol excise tax that Prohibition caused an increased necessity of personal income tax. Prohibition was repealed on February 20, 1933. According to Robert Schlesinger of *US News*, said, "It [Prohibition] was killed by a combination of unenforceability, rising lawlessness, and a staggering economy that needed the boost in jobs and tax revenues from a revived liquor industry," (Schlesinger, *US News,* 2013).

Prohibition's intent was to curb supply by making the production, distribution, and sale, not consumption of alcohol illegal. However noble the intents of Prohibition,

Jane McGrew writer of the *National Commission of Marihuana and Drug Abuse* states, "Statistics demonstrated the increasing volume of the bootleg trade. In 1921, 95,933 distilleries were seized and 34,175 people were arrested for Prohibition related crimes; while in 1930, the number of seized distilleries grew exponentially to 282,122, and 75,307 total alcohol related arrests were made in 1928," (McGrew, *Schaffer Library of Drug Policy,* n.d.). This is a 194 percent increase in the number of distilleries and an increase of 120 percent in the number of arrests made. The intent of Prohibition was to cause a decrease in the number of arrests resulting from the criminalization of such offenses, but legislation could not suppress the voracious demand for alcoholic beverages and the profits to be made from importing and selling it. The supply of alcohol stopped being manufactured from a regulated and taxed supply and came from organized criminal groups that were illegal, unregulated, and untaxed.

Illicit suppliers would often use industrial alcohol to quench demand. To hinder the consumption of this industrial supply, "The Treasury Department ordered manufacturers of the industrial alcohol to include notable poisons like: kerosene, benzene, mercury salts, formaldehyde, chloroform, acetone, and methyl alcohol," (Blum, *Slate,* 2010). Basic economic principle would confirm that if a demand for something exists then someone would supply the demand, whether it is illegal or legal. The illegal market only increased the profit and incentive to meet the legal consumption of alcohol. This system of illegal supply hindered government tax receipts meanwhile giving rise to organized criminals like Al Capone who mentions, "All I do is supply public [legal] demand … somebody had to throw some liquor on that thirst. Why not me," (Capone, *University of Michigan,* 2004).

Prohibition, from 1920-1933, is an era in American history that has proven how legislation criminalizing 'unenforceable' laws does nothing but foster an illicit, unregulated, and unsafe supply while giving rise to organized crime, and such things caused Prohibition to be repealed. As with the Prohibition of alcohol's ineffectiveness to curb demand, the second wave of substance prohibition, namely the "War on Drugs" would follow suit. This war has trampled on the ideals of "life, liberty, and the pursuit of happiness" by unjustly and unlawfully incarcerating people for drug crimes instead of treating them as patients, sick with a health issue, drug addiction.

Methodology

I focus much of my research on existing, primary sources including, but not limited to Supreme Court rulings, patent applications, uniform crime reports, state house bills, petitions, law journals, and personal interviews. I explore sources from advocacy groups like the National Organization for the Reform of Marijuana Laws, Patients Out of Time, The Cannabist, High Times Magazine, and Leafly. Alongside seemingly conflicting sources from the Office of National Drug Control Policy, the Drug Enforcement Agency, and the Federal Bureau of Investigation to somewhat paint the path of cause(s), effect(s), and sentiment(s) towards *Cannabis sativa*. I start this path with the passing of the Marihuana Tax Stamp Act to present day alongside the increase in both the marijuana possession arrests and the incarceration rates independent of the cause, effect, and/ or change in sentiment.

The findings and recommendation from the Shafer Commission serve as a baseline with regards to marijuana reform in the 1970s in response to the signing of the Controlled Substances Act. For example, in *Marihuana, A Signal of Misunderstanding*,

Chairman Raymond Shafer defines the purpose of the report as, "to present the facts as they are known today, to demythologize the controversy surrounding [cannabis], and to place in proper perspective one of the most emotional and explosive issues of our time." As the Commission on Marihuana and Drug Abuse concluded its report in March 1972 with the hopes the recommendation would allow for federal and state agencies to deemphasize marijuana as a problem, but with the recommendation being ignored, marijuana possession arrests increased from, "292 thousand in 1972 to 421 thousand in 1973," (FBI Uniform Crime Reports, 1925-1981). Adding to my research are studies performed by commissions appointed by LaGuardia, Prettyman, and Katzenbach. All such commissions find and corroborate on the grounds that marijuana use was not a detriment to the degree of other drugs like cocaine or heroin, and treatment of such offenders should be lessened because of this.

Secondly, I analyze the commissions' findings alongside the legal definitions of the 'qualifiers' necessary of a Schedule I controlled substance alongside the court rulings of Randall v. United States and the subsequent inception of the Compassionate Investigational New Drug Program as well as various patents from pharmaceutical companies, universities, and governmental departments to conclude that the differentiation of *Cannabis sativa* as a plant and its synthetic variations is null and should not be treated as different. Then, the adoption of medical cannabis through California's Proposition 215 in 1996 seems like an obvious next step when seen in line with the claims of such patents analyzed; thereby, making such 'legalization and regulation' for the medical use of *Cannabis sativa* necessary and appropriate. After making the case for medical cannabis the next 'logical' step, I trace how some rights might be in question and

how there might be a constitutional basis for cannabis use and legalization. Once the case for states to independently escape the implications of the Schedule I classification for *Cannabis sativa*, I use economic models to approximate a high and low estimate for: the difference in costs of enforcement, the difference in fine expenditures related to the offender in accordance to the recommendation of the Shafer Commission, three aggregate models on what the valuation of all cannabis business could expected to be worth, and averages of the total tax revenues associated with the aggregate valuation of all cannabis business in the United States. These calculations for all years, 1972 to 2016(7) were derived from primary sources, then extrapolated for all other years from the relative change in gross domestic product from one year to the next.

Chapter I

Major Events in the "War on Drugs"

In this chapter, I will analyze major 'events' and pieces of federal legislation and their direct impacts on relative incarceration rates from the passage of the Marihuana Tax Stamp Act of 1937 to the present day. H.J. Anslinger became the commissioner of the FBN in August of 1930 when 24 states had already forbade cannabis, but there was no unifying federal measure like the 18th Amendment with alcohol that fully prohibited the production, distribution, and sale of hemp. Before 1934, Anslinger thought that trying to eradicate something that grows "like dandelions," (Musto, *The American Disease,* p. 221-22), to be extremely foolish. His sentiment, however, changed, "when the FBN was floundering. Tax revenue plummeted during the Great Depression, the bureau's budget got slashed… and Anslinger set out to convince Congress and the American public that a terrible new drug menace [which alcohol was just 14 years prior], requiring immediate action by a well-funded FBN," (Lee, p. 49).

Anslinger demonized cannabis and hemp preparations by describing use of marijuana, "leads to pacifism and communist brainwashing," (Anslinger, *LibraryQuotes,* 2005), as well as, "is the most violence-causing drug in the history of mankind," (Gerber, *Legalizing Marijuana,* p. 7). Anslinger petitioned, "temperance organizations, religious groups, and civic clubs," (Lee, p. 49), while trying to convince Congress and the American public of these irate beliefs, as well as preachers to stir up support of eradicating an herb with the historic support of Washington, Adams, and Jefferson alike,

was now denounced as "the Devil's Weed," (Lee, p. 49). Anslinger became extremely overworked while doing such convincing, that he became hospitalized for exhaustion and insomnia on April 1, 1935. The medical director of the U.S. Marine hospital in Norfolk, Virginia states that Anslinger was, "suffering from a form of nervous strain incident to his professional duties," (Jill Jonnes, *Hep-Cats, Narcs, and Pipe Dreams,* p. 104).

While recovering, William Randolph Hearst, publisher of, "20 daily and 11 Sunday papers that one-fourth of all Americans read," (William Randolph Hearst, *Bio.com*, n.d.) filled the gap that Anslinger was unable to do. Hearst used tactics like, "fabricating stories, doctoring photos, and having a contempt for facts gave rise to the expression of 'yellow journalism,'" (Lee, p. 50). Hearst's continuation of these tactics, stigmatized Mexicans using cannabis. The stigmatization of these users worsened the already damaged view of Mexican immigrants during the Great Depression. White Americans at this time "were competing with brown-skinned migrants for scarce jobs," (Lee, p. 51). In the Roaring Twenties, two million Mexicans were gladly welcomed into America, but were deported when the economy stuttered after Black Friday's stock market collapse. Sentiment of these immigrants changed quickly, making these minorities more susceptible of racial profiling by Hearst's yellow journalism. Commissioner Anslinger knew that the likelihood of prohibitory legislation increased if the substance in question [cannabis] was associated with ethnic minorities. Anslinger released such pertinent details that would solidify his political agenda of making cannabis illegal stating, "50 percent of violent crimes committed in districts occupied by Mexicans, Greeks, Turks, Filipinos, Spaniards, Latin Americans, and Negroes may be traced to the use of marihuana," (*Union Signal* in Bonnie and Whitebread, *The Marijuana Conviction,*

p. 106) [Anslinger changed the vernacular of cannabis to make it appear like a different substance all together and to further associate its use to Mexican immigrants].

Such targeting and profiling of ethnic minorities in America gave Congress a foothold to influence the public through mass media films like *Reefer Madness* (1936). *Reefer Madness* gives the viewers a flawed [Anslinger's] perception of how cannabis intoxicates the body and the user. Throughout the 'documentary', undertones of cannabis' addictiveness are being made. This addiction causes users to wreck cars, to engage in violent outbreaks, and to descend into madness. The federal government of the 1930s is not as informed about cannabis as today. Typical users of cannabis in the 1930s consisted of ethnic minorities in port cities. These ethnic minorities would be integrated with White culture with the uprising of speakeasies during Prohibition. Drinking, dancing, and a Jazz environment that was almost exclusively Black musicians typified the environments of speakeasies. This is how the knowledge of marihuana [cannabis] was first exposed to the 'typical' American in the 1930s. The intent of *Reefer Madness* is to increase awareness and to develop hysteria among the American public, giving support for a 'unifying federal measure'.

This unifying federal measure that would extinguish the herb that grows 'like dandelions' would be introduced before Congress only a year after the creation of *Reefer Madness.* The Marihuana Tax Stamp Act of 1937, a United States Act placed an inordinate tax on the sale of cannabis [hemp] preparations. HR 6385 was drafted by Anslinger himself and introduced by Representative Robert Doughton of North Carolina on April 14, 1937. "The purpose of the act is to levy a token tax of approximately one dollar on all buyers, sellers, importers, growers, physicians, veterinarians, and any other

persons who deal in marijuana commercially, prescribe it professionally, or possess it," (Solomon, *Schaffer Library of Drug Policy,* n.d.). The implications of this act were to bankrupt the hemp industry holistically because the tax on the hemp preparation itself cost more than it was worth. Solomon goes on to argue that the taxes and regulations of the Marihuana Tax Stamp Act implemented by the FBN, "made it far too risky for anyone to have anything to do with marijuana [hemp and cannabis] in any way whatsoever," (Solomon, *Schaffer Library*).

The Marihuana Tax Act of 1937 not only attacked the ethnic minorities that were using cannabis as an intoxicant, but also destroying a growing hemp industry that could potentially develop a domestic supply of papers, ropes, and garments. In the infancy of discovering the industrial advantages of hemp, Anslinger and influential colleagues came together to investigate the: agricultural, economic, and industrial aspects of hemp and the chemical, pharmacological, and sociological aspects that Marihuana [cannabis] had with people on December 5, 1938, during the Marihuana Conference. Such discussions explain the nature of hemp production in the United States when Dr. B.B. Robinson, Bureau of Plant Industry under the Department of Agriculture, informs the Conference:

> The fact of the importance that hemp played in our earlier Colonial days before the introduction of the cotton gin…The culture of hemp in the United States [has decreased] because of the cheap competitive fiber and it is because of this cheapness that they are substituted for hemp in many cases, and not because of the fact that they have characteristics that are better. The average world production between the years 1930 and 1938 [this year] for hemp was about 750 thousand tons. And now, during that same period in the United States in this

small industry we have produced about 500 tons, (Robinson, *Marihuana Conference,* 1938).

The testimony of Robinson further solidifies and informs Congress and the FBN commissioner that the culture of hemp has been an integral part of American history, but cheaper fibers like DuPont's nylon has caused domestic hemp production dwindling leaving no need for the Marihuana Tax Act. The hemp industry would have been less restricted if the drug was not active. Dr. S. Loewe, Pharmacologist at Cornell University Medical College states at the Conference, "I have tried Marihuana's action on a monkey, the observations were that the monkey reacts like the dog, and is one more of the few laboratory species which really show the ataxia action," (Loewe, *Marihuana Conference,* 1938). Ataxia is a condition in which an animal or person loses full and total control of body movement. Loewe goes on to explain that he has never witnessed these things with any human by saying, "I have no experience; I never saw it." The objective of this conversation is to impose that cannabis use could lead someone to lose control of his or her own body and mind altogether. This combination would then make the user become delirious enough to commit heinous crimes. When Loewe was doing such observations on monkeys and dogs, he was using a "pure form" of the drug, "to inject in his samples introducing it by intravenous injection." However, promising this 'pure form' of cannabis is, Nico Escondido, writer for *High Times,* states that, "Dr. Raphael Mechoulam and his colleagues were the first to synthesize the primary psychoactive compound delta9-tetrahydrocannabinol (THC) in 1964 at the Weizmann Institute of Science in Rehovot, Israel," (Escondido, *High Times*, 2011). Such allegations of Loewe injecting this 'pure' synthesized form of cannabis into samples is an outright lie that only added to the cause

of the Marijuana Tax Act of 1937. This lie stigmatized the use of cannabis as an intoxicant among the ethnic minorities that tended to use cannabis at this time in American history; all while creating a bureaucracy, FBN, to fight the hemp industry, which was shrinking. The ability to see if hemp was 'free of the drug' was impossible as well. The racial subtext behind the FBN and its eradication of cannabis is seen further in the Marihuana Conference when Dr. Robinson states in conjunction with Dr. Walter Bromberg, Senior Psychiatrist Department of Hospitals New York City. Robinson states, "The native home of hemp is Central Asia, China or India. Indian hemp has been of the narcotic type… and what I have been able to learn from others, hemp does not appear to constitute a narcotic problem in China." Bromberg adds, "We must also note that there are many racial types in our material. This is important, because the British investigators have noted in India that Cannabis does not bring out the motor excitement or hysterical symptoms among Anglo-Saxon users that occurs among natives," (*Marihuana Conference*, 1938). The idea of people having biologically different tolerances to substances on the basis of race is baffling and is without any psychiatric expertise of Bromberg.

In the years following the Marihuana Conference, the American Medical Association (AMA) removed cannabis from the United States pharmacopoeia in 1942, where it had been since 1851. The U.S. Pharmacopeial Convention (USP), "is a scientific nonprofit organization that sets standards for the identity, strength, quality, and purity of medicines, food ingredients, and dietary supplements manufactured, distributed and consumed worldwide," (*US Pharmacopeial Convention,* 2016). Debra Borchardt explains, "Eli Lilly, Parke-Davis (now owned by Pfizer) and Abbott Laboratories all sold

medical marijuana tinctures at the turn of the century," (Borchardt, *Forbes Magazine,* 2016). With the passing of the Marijuana Tax Act in 1937, the supply of hemp to make such products was lessened severely likewise the number of prescriptions fell as well. The Tax Act levied a tax on any doctor and pharmacist that was using cannabis or hemp extracts in medicine. The impact of the tax can be seen when Borchadt states, "almost six percent of all manufactured drugs at the turn of the century contained cannabis in one form or the other," (Borchardt, 2016). The AMA was pressured then to remove *Cannabis sativa* and all of its derivatives from its medicines. Along with extreme costs in prescribing cannabis, tactics made by the FBN made the general public more apt to believe that cannabis users typically, "Mexicans, Greeks, Turks, Filipinos, Spaniards, Latin Americans, and Negroes," (Bonnie, p. 106) would commit violent criminal acts that are more typical of users of other narcotics [cocaine and heroin]. This view of cannabis users was the standing fact pertaining to drug policy in America until the LaGuardia Commission report in 1944.

Fiorello LaGuardia's long career in politics began when elected as a Republican to the House of Representative in 1916 to the Sixty-fifth Congress for New York. His tenure of being a Representative extended through the grips of Prohibition, which, "he opposed and also supported woman suffrage and child-labor laws," ("LaGuardia Is Dead," *New York Times*, 2010). LaGuardia was elected as the Mayor of New York City in 1933, the same year Prohibition was repealed. In his eleventh year of New York City, "Fiorella LaGuardia called upon The New York Academy of Medicine to produce a report about marijuana," ("Marijuana and Drug Policy Reform in New York," *Drug Policy Alliance,* 2014). LaGuardia states in the motive of the full report made in 1944

when he states, “Rumors were recently circulated concerning the smoking of marihuana by large segments of our population and even by school children, I sought advice from The New York Academy of Medicine… I appointed a special committee to make a thorough sociological and scientific investigation, and secured funds from three Foundations with which to finance these studies,” (LaGuardia, *New York Academy of Medicine,* 1944). This study was the first scientific and sociological investigation of cannabis use by a source other than the FBN. The findings of the report are:

> The cost of marihuana is low and therefore within the purchasing power of most persons [leading an explanation as to why the FBN could attach the use to poor, ethnic minorities], the majority of marihuana smokers are Negroes and Latin-Americans, the practice of smoking marihuana does not lead to addiction in the medical sense of the word, the use of marihuana does not lead to morphine or heroin or cocaine addiction [‘stepping stone’ or gateway theory is disproved], and Marihuana is not the determining factor in the commission of major crimes, (LaGuardia, *New York Academy of Medicine,* 1944).

The LaGuardia Commission Report would be the first of many reports to be ignored by the FBN to change legislation of Marihuana and hemp. LaGuardia’s final position in government was the director general of the United States Relief Administration (UNRRA) whose purpose is to, “plan, co-ordinate, administer… the relief of victims in any area under the control of the United Nations through the provision of food, fuel, clothing, and medical and other essential services,” (*UNRRA,* 1943). LaGuardia did not get to see his progressive ideal of legalizing cannabis before his death in 1947.

The points of the LaGuardia Report being ignored would continue the cannabis prohibition. Cannabis criminals would in fact be lumped together with offenders of heroin and cocaine crimes when in 1952 the Boggs Act was passed. Hale Boggs, a Louisiana Democrat, sponsored the Act. The Boggs Act outlined harsher mandatory minimums, prescribed sentence lengths that judges cannot lower, for cocaine, heroin, and cannabis offenders. "Under the Boggs Act, simple possession of such narcotics carried a two-year mandatory minimum sentence for the first offense, a subsequent offense would carry a five-year sentence, and a third offense would carry a minimum of a ten-year sentence," (A Brief History, *Tilem & Associates,* 2009). This legislation was motivated by the apparent increase in drug addiction and trafficking offenses. The increase in offenses can be explained by, "the abnormal postwar drug splurge and the increased force of [FBN] agents now in the Narcotics Bureau. Congress provided funds last year to add 87 agents bringing the total to 270, and the increased efforts [coordination and cooperation] of states and communities to wipe out the drug menace," (Byrd, *Health Instructions Yearbook,* 1952). Such legislation did not, however, make a difference between addicts and traffickers. Regardless of intent, everyone convicted of drug crimes received the same mandatory minimum sentence only depending on how many prior offenses one had been convicted of. Such legislation is ironic and hypocritical at its very roots. The hypocrisy is Anslinger himself, "arranged a regular supply of morphine," (Anslinger, *The Murderers,* p. 181), for, "none other than Senator Joseph McCarthy," (McWilliams, *The Protectors,* p. 98-99). Anslinger even mentioned to a congressional hearing in 1951, "They started there and graduated to heroin; they took the needle when the thrill of marijuana was gone," (Sullum, *Forbes Magazine,* 2015). In 1952, the total

number of people incarcerated was 168,233 and the national incarceration rate was 107 people per 100,000. (Bureau of Justice Statistics, 1981).

Just two years later, in 1954 President Dwight Eisenhower called for, "a new war on narcotics addiction at the local, national, and international level," (Jonnes, *Hep-Cats,* p. 262); to emphasize that narcotic drugs were a matter of immediate concern to his administration. In 1956, the Narcotics Control Act of 1956 was passed. This Act increased the mandatory minimum for the first-time drug offender from two years to five and any subsequent offenses from five years to ten years, (A Brief History, *Tilem & Associates,* 2009). These mandatory had little impact on the number of drug traffickers and the number of drug addicts in the country. In fact, the only indication that such thing was being affected is the rising number of people incarcerated in America. By 1957, only six years after the Boggs Act was passed, the number of people incarcerated rose to 195,414, a 16 percent increase, (Bureau of Justice Statistics, 1981), while the total US population only increased nine percent in the same time period. The total prison population increased 1.5 times as fast as the population, showing either the increase in drug addiction or the increase in the FBN's incentive to arrest such people.

The dramatic foil to the 1950s increase in mandatory minimums is seen with the Advisory Commission on Narcotics and Drug Abuse, more commonly known as the Prettyman Commission, set forth by Executive Order 11076. The design of this advisory commission is to, "design and put into operation a master research plan that would permit a comprehensive program of research to be carried out on all aspects of narcotics and drug abuse," (President's Advisory Commission on Narcotics and Drug Abuse, 1963). This was the first national, presidential 'program of research' that would investigate

alternatives to dealing with narcotics and drug abuse in the United States. The commission recommends treating individual drug abusers instead of forcing them into a jail sentence that, "made rehabilitation of the convicted narcotics offender virtually impossible, since there is no incentive for rehab where there is no hope for parole," (President's Advisory Commission, 1963). This commission suggests that the 'peddlers of small quantities' and 'traffickers' be treated differently in any legislation that may be formed. This was one of the many issues with both the Boggs Act and the Narcotics Control Act of 1956; the user and trafficker were treated the same with mandatory minimums. Additionally, and most importantly, the commission states, "Any legislation providing for [needing] Federal regulation should not be limited to barbiturates and amphetamines alone, but ones…that can result in psychotoxic [pertaining to certain drugs that can damage the brain] or antisocial behavior," (President's Advisory Commission, 1963). This definition of substances that would require 'federal legislation' should not require cannabis. Mahmoud ElSohly published *Potency Trends* for Ole Miss in 2010, stating, "The nonpsychotropic cannabinoid Cannabidiol (CBD) displays antipsychotic, antihyperalgesic, anticonvulsant [for patients with epileptic seizures], neuroprotective, and antiemetic properties," (ElSohly, *Potency Trends,* 2010). Additionally, the LaGuardia Commission Report done 19 years before the Prettyman Commission, states, "The use of marihuana, the individual experiences increased feelings of relaxation, disinhibition, and self-confidence. This new feeling of self-confidence induced by the drug expresses itself through oral activity rather through physical activity [an increase in sociability not antisocialism]," (LaGuardia, *New York Academy of Medicine*, 1944). If the two properties of drugs that need 'federal legislation' namely being a psychointoxicant and something

that elicits antisocial tendencies are not met, then cannabis should not need such 'federal legislation' as outlined in the President's Advisory Commission on Narcotics and Drug Abuse.

While the Prettyman Commission was monumental in the treatment of low-level 'peddlers of small quantities' of narcotics, its ideals did not come to fruition because of President John F. Kennedy's death only seven months after the interim report was made. Further advances came in 1966 with the Commission on Law Enforcement and Administration of Justice, commonly known as the Katzenbach Commission. The goal of this Commission of President Lyndon B. Johnson is, "to develop far broader range of alternatives for dealing with offenders-is based on the belief that, while there are some who must be completely segregated from society, there are many instances in which segregation does more harm than good," (The Challenge of Crime in a Free Society, 1966). This Commission goes on to inform the readers about the rise in cannabis seizures and arrests, "use appears to be increasing. Bulk seizures of marihuana by Federal enforcement authorities totaled 5,641 kilograms in 1965 as against 1,871 kilograms in 1960. Bureau of Narcotics arrests for marihuana offenses about doubled over the same period of time," (The Challenge of Crime in a Free Society, 1966). While the Prettyman Commission suggests that rehabilitation is a better alternative than incarceration, this Commission suggests otherwise by saying, "The enforcement and related staff of the Bureau of Narcotics should be materially increased. The need for more funds and more staff are necessary. Yet the simple fact is that the Bureau has numerous complex tasks to perform. It bears the major Federal responsibility for suppression of traffic in illicit narcotics and marihuana," (The Challenge of Crime in a Free Society, 1966). The idea

that more money given to the FBN would lower drug crimes is ludicrous. With more agents 'suppressing the traffic in illicit narcotics and marihuana', the incentive in becoming a trafficker of such illicit narcotics and marihuana becomes higher. The ultimate goal of the Katzenbach Commission is for; "state and federal drug laws should give a large enough measure of discretion to the courts and correctional authorities to enable them to deal flexibly with violators, taking account of the nature and seriousness of the offense, the prior record of the offender and other relevant circumstances," (1966). Such 'flexibility with violators' would ultimately be the idea that would repeal the mandatory minimums set by the Boggs Act and the heightened mandatory minimums of Narcotics Control Act of 1956. Regardless of the efficacy of both these Commissions, the total number of people incarcerated decreased from a relative high in 1962 with an incarceration rate of 117 per 100 thousand citizens and a total prison population of 218,830 to 111 per 100 thousand in 1964 and a total prison population of 214,336, the total prison population decreased two percent, one year after the Prettyman Commission, (Bureau of Justice Statistics, 1981), while the United States population grew at 2.9 percent in the same time period, Likewise, the time between the Prettyman and the Katzenbach Commission saw a reduction in total prison population of 12.3 percent from 1964 to 1968, "the total prison population from these time periods decreased from 214,336 to 187,914," (Bureau of Justice Statistics, 1981).

The University of Mississippi (Ole Miss) has had cannabis lawfully and legally growing since 1968. "The project began in 1968, when the National Institute of Drug Abuse (NIDA) gave the university and the Research Institute of Pharmaceutical Sciences its first contract," (Garrett, *Ole Miss News, 2012).* Currently, "it is the nation's only

federally sanctioned marijuana farm, producing a research supply through a contract with [the University of Mississippi] in Oxford," (Shen, *Nature.com*, 2014). The Prettyman Commission suggested that substances needed 'legislation if they can result in psychotoxic and antisocial behavior,' (1963). Other reasons behind this contract awarded to Ole Miss includes the increased social acceptance of the use of cannabis as well as it being, "essential to have this resource available to researchers so that we can continue to make progress in understanding the endogenous cannabinoid system, as well as marijuana abuse and dependence," (Garrett, 2012). While this essential resource is at Ole Miss, the NIDA does have specific instructions before an institution is granted a contract to study marijuana abuse and dependence. These specific instructions can be seen in the NIDA's "Request for Proposals Notice" (2014). The institution must be able to:

> Cultivate, harvest, process, analyze, store, and distribute cannabis for research; extract cannabis to produce and standardized extracts containing varying concentrations of THC and CBD; isolate current Good Manufacturing Practices (cGMP-grade) and research grade THC, CBD, and other cannabinoids; supply research investigators and/or to the NIDA Drug Supply program upon NIDA authorization; analyze confiscated cannabis samples submitted by the Drug Enforcement Agency (DEA); maintain a secure and video monitored outdoor facility and an indoor growing facility; and secure storage (vault) facility to maintain an inventory of approximately 400 to 700 kilograms, (Request for Proposals Notice, *NIDA,* 2014).

At the time when the NIDA opened up the research supply of cannabis, Dr. Timothy Leary brought his three federal marijuana crimes to the Supreme Court of the United

States on the grounds that the Marijuana Tax Stamp Act of 1937, compelled himself and all others in question of a possible violation of the Act, to expose him or herself to a real and appreciable risk of self-incrimination. His three counts consisted of, "smuggling marijuana into the United States, charged transportation, facilitation of transportation, and concealment of marijuana after importation in violation of Title 21 United States Code, Section 176a, and charged transportation and concealment of marijuana by defendants as transferees, required to pay the transfer tax imposed by the Internal Revenue Code, in violation of Title 26 United States Code, Section 4744(a), and was given the maximum penalties and fines provided for such offenses," (Leary v. United States Supreme Court, 1969). These fines and penalties, "provides for a maximum fine of not more than $20,000 and shall be imprisoned not less than five years or more than twenty years for a first offense," (21 U.S.C. Section 176), for the charge of concealment of marijuana after importation, and the "maximum fine of $20,000 and imprisonment of ten years for a first offense violation," (26 U.S.C., Section 4744(a)).

These charges happened in 1965 when Leary and his family drove across the international border into Mexico. After crossing into the Republic of Mexico, Leary was stopped at the immigration station and told to come back the next morning to secure tourist permits. Leary had to go back into the United States through Laredo, Texas, where he was searched and three partially smoked marijuana cigarettes were found.

Leary challenged that such charges under the Marijuana Tax Act of 1937 denied him Fifth Amendment privilege against self-incrimination and due process. Leary would be put in a legal "double jeopardy" with paying such transfer tax of the Marijuana Tax Act of 1937. Leary would be put in a position to pay a legal tax on an illegal substance or

to pay an illegal tax on a legal substance; either of which caused strife on users of cannabis. The legal "double jeopardy" associated with use of cannabis under the Marijuana Tax Act would be defined by this court case. Justice Marshall Harlan II's opinion swayed other justices to make a unanimous decision repealing the Act. After the repeal of the Marijuana Tax Stamp Act of 1937, Congress quickly introduced new legislation, the Comprehensive Drug Abuse Prevention and Control Act of 1970.

The Comprehensive Drug Abuse Prevention and Control Act of 1970 was introduced on September 24, 1970, only 14 months of Leary v. the United States Supreme Court. This Act's primary function was to outline, "the illegal use of legally manufactured drugs, such as amphetamines and barbiturates," (Comprehensive Drug Abuse Prevention and Control Act of 1970, *FindLaw,* 2016). The two main components of this Act include the Controlled Substances Act and the Importation and Exportation, Criminal Forfeiture, and Drug Law Amendments, Title II and Title III respectively. The Controlled Substances Act (CSA), "provides the legal basis for the government's war on drugs. This law consolidated laws on manufacturing and distributing drugs of all kinds, including narcotics, hallucinogens, steroids, and chemicals when used to make controlled substances, etc.," (Title II, 1970). The CSA outlined drugs into five different schedules, with higher schedules being considered less addictive and having a more widely accepted medical use in the United States. Schedule I drugs are defined as, "a high potential for abuse, no current accepted medical use in the United States, and lack of accepted safety for use of the drug," (CSA). Some drugs in this schedule include lysergic acid diethylamide (LSD), a powerful hallucinogen; heroin, a highly addictive painkiller derived from morphine; ecstasy; and marijuana and all of its derivatives. Schedule II

drugs are defined as, “having a lessened potential for abuse when compared to Schedule I drugs, currently have accepted medical treatment in the United States, and abuse of the drugs in this schedule may lead to severe psychological and physical dependency,” (CSA). Some drugs in this schedule include cocaine, methamphetamine, prescribed for extreme obesity; Methadone, used for opiate and heroin withdrawals; OxyContin, a medication used to relieve moderate to severe pain; Adderall and Ritalin, an amphetamine used to treat Attention Deficit Disorder and narcolepsy. Schedule III drugs are defined as, “having a moderate to low potential for physical and psychological dependency,” (CSA). Some drugs in this schedule include Vicodin, ketamine, anabolic steroids, and dronabinol, synthetically derived THC used to treat nausea and to increase appetite among patients undergoing cancer and AIDS treatment. Schedule IV drugs are defined as, “having a low potential for abuse and low risk of dependency,” (CSA). Some drugs in the schedule include Xanax, used to treat anxiety; Soma, a muscle relaxant; and Ambien, a medication used to treat insomnia. Schedule V drugs are defined as, “having the least potential for abuse and contain limited quantities of certain narcotics,” (CSA). The medications are usually used for, “antidiarrheal, antitussive, analgesic purposes, and may not require a prescription,” (CSA). Title III of the Comprehensive Drug Abuse Prevention and Control Act of 1970, “changed the law and penalties regarding importation and exportation of controlled substances and criminal forfeiture,” (Title III, 1970). Criminal forfeiture is the government confiscating assets of drug criminals to fund the drug agency that arrests the person possessing the different scheduled controlled substances.

Once the CSA was signed into law, specific political activists like Ralph Nader and attorney Keith Stroup aspired to create an organization to lobby for changes to cannabis laws. Stroup was denied by every major foundation for funding until he met with Hugh Hefner and the Playboy Foundation. Hefner gave Stroup the first $5,000 to fund the National Organization for the Reform of Marijuana Laws (NORML) in 1970, (Reuteman, *CNBC*, 2010). NORML at its core beliefs represents the voice that was not heard in the 1960s after the Prettyman Commission.

In signing the Comprehensive Act of 1970 on October 27, 1970, Nixon launched the National Commission on Marihuana and Drug Abuse, Shafer Commission, in 1972. The Shafer Commission broadened the scope of knowledge on cannabis much like the LaGuardia Commission did almost 30 years prior. The Shafer Commission "conducted the most extensive and comprehensive examination of marijuana ever performed by the US government," (Nixon Tapes Show…, *CDSP*, 2002). The LaGuardia Commission in effect did the same thing but on a much narrower demographic of people confined to only New York City. "Both sets of findings are strikingly similar in the three areas that have historically created public apprehension about marihuana use, namely that marihuana, in itself, is physically addictive, produces insanity, and leads to crime. Both reports dispelled such allegations and myths," (Pike, *Marijuana,* 2014). Since the allegations of marijuana being physically addictive, producing insanity, and imminent crimes being laid to rest, the Shafer Commission's recommendation was, "the decriminalization of possession and non-profit transfer of marijuana," (Shafer Commission, 1972, p. 151). Decriminalization of marijuana would be treated more like a traffic citation whose

punishment includes a small fine and no arrest record. Regardless of such conclusive evidence compiled from:

> Thousands of pages of transcripts of formal and informal hearings, solicited all points of view, including those of public officials, community leaders, professional experts and students…. they conducted separate surveys of opinion among district attorneys, judges, probation officers, clinicians, university health officials and 'free clinic' personnel. They commissioned more than 50 projects, ranging from a study of the effects of marijuana on man to a field survey of enforcement of the marijuana laws in six metropolitan jurisdictions, (Pike, *Marijuana.com,* 2014).

President Nixon states to his aide H.R. Aldeman, "I want a goddamn strong statement about marijuana. Can I get that out of this of sonofa-bitching, uh, domestic council [Shafer Commission]? I mean one on marijuana that just tears the ass out of them," (*Smoke Signals,* Lee, p. 121). Nixon hated and not only marijuana but also marijuana users and the ideology that was typified from them. Nixon goes on to say, "You see, homosexuality, dope, immorality in general. These are the enemies of strong societies. That's why the Communists and the left-wingers are pushing the stuff; they're trying to destroy us," (Oval Office Tape, 1971). Within one year of Nixon and the White House ignoring the findings of the Shafer Commission, the Drug Enforcement Agency is formed in 1973. The Drug Enforcement Agency was created with the joining responsibilities of the FBN and the Bureau of Drug Abuse Control. Such agency's effects can be seen in the total number of marijuana arrests climbing from, "292,179 in 1972 to 420,700 in 1973 [a 44.03 percent increase]," (Federal Bureau of Investigation, Uniform Crime Reports,

1972-2000). It would take another 22 years of the "War on Drugs" to see that increase in marijuana arrests again.

Since the sentiment of the Shafer Commission, one of federally decriminalizing marijuana was not equated in the scheduling of marijuana shortly after in the CSA of 1970, "NORML led the successful efforts to decriminalize minor marijuana offenses in 11 states and significantly lower marijuana penalties in others," (A Voice for Responsible Marijuana Smokers, *NORML,* 2013). In 1973, Oregon became the first state to apply such laws on the state level. By 1980, 10 other states followed suit. "Alaska, California, Maine, Minnesota, Mississippi, New York, Nebraska, North Carolina, and Ohio have in some manner altered their existing laws to reduce the penalties for marijuana possession," (Austin, *NORML,* 2016). The decriminalization movement's central argument is that avoiding a criminal offense saves money in three main fields, court and judicial costs; police and enforcement costs; and corrections and incarceration costs. While costs of enforcing marijuana laws decrease immensely under decriminalization, opponents of decriminalization argue that decreased punishment heightened the incentive to use it. "In Ohio, where decriminalization was instituted in 1975, use of marijuana rose from 27 percent to 33 percent from 1974 to 1978 among those aged 18 to 24, and from six percent to 19 percent among those aged 25 to34 during the same period (pp. 458-459). In California, which decriminalized marijuana use in January 1976, adult marijuana use rose from 28 percent to 35 percent from February 1975 to November 1976," (Single, *Journal of Public Health Policy*, p. 456-66). More objectivity is needed to see the true scope of these statistics because these statistics were taken from a time when in general marijuana consumption was increasing and peaked in 1979, (Goode, 1990). When

comparing decriminalized states to states that had the strictest illegality of cannabis, "the group of states with the most severe punishments had the highest proportionate increases of the groups," (Single, p. 459). This system of regulating cannabis in this fashion did protect citizens in such states from a criminal action, but medical marijuana did not come to fruition until the court cases involving Robert Randall.

The court case of United States v. Randall is the beginning of medical marijuana in the United States since the Marihuana Tax Stamp Act of 1937. Robert Randall was arrested for marijuana cultivation. Suffering from glaucoma, Randall used the, "Common Law doctrine of necessity to defend himself against criminal charges," (*Alliance for Cannabis Therapeutics*, 1999). On November 24, 1976, federal Judge James Washington ruled that Randall could use marijuana for his medical condition out of 'medical necessity.' Judge Washington ruled:

> While blindness was shown by competent medical testimony to be the otherwise inevitable result of defendant's disease [glaucoma], no adverse effects from the smoking of marijuana have been demonstrated…. Medical evidence suggests that the medical prohibition is not well founded, (*Alliance for Cannabis Therapeutics,* 1999).

Upon the decision of the court case, Randall was, "subsequently allowed access to the federal cannabis supply through the Compassionate Investigational New Drug (IND) Program that was under the authority of the Food and Drug Administration (FDA)," ("Federal IND Patients," *Medical Cannabis*, 2016) from Ole Miss. Shortly after the court ruling, federal agencies, namely the ones that administer the 'federal cannabis supply' [FDA, DEA, and NIDA] attempted to stifle the supply. Randall filed suit (Randall v.

United States, 1978) against such agencies. “With an out-of-court settlement whose results allowed Randall prescriptive access to marijuana through a federal pharmacy located near his home,” (*Alliance for Cannabis Therapeutics*, 1999). This court decision set the legal precedent for medical use of marijuana through the FDA’s Compassionate IND program. This program, however, was extremely limited in the patients that could have access to the ‘federal cannabis supplies.’ With actions for medical use of marijuana under the Compassionate IND program, the annual marijuana arrests declined from, “446 thousand in 1978; to 392 thousand in 1979; to 405,600 in 1980; to 400,300 in 1981,” (*FBI*, 1972-2000).

While arrests for marijuana were decreasing in the late 1970s and early 1980s, the sentiment for, “adolescent drug prevention became a movement in the 1980s,” (Lilienfeld, Arkowitz, *Scientific American,* 2014). First Lady Nancy Reagan became the face of such movement when she uttered, ‘Just Say No,’ in 1982, “in response to a schoolgirl who wanted to know what she should say if someone offered her drugs,” (Lilienfeld, Arkowitz, 2014). This approach was made to increase awareness regarding drug use and abuse. To increase such awareness of drug use, adolescent drug prevention program, Drug Abuse Resistance Education (DARE) was created in 1983 by the Los Angeles Police Department. The DARE program has become the most prominent program on educating pupils the dangers of using drugs which also uses a, “uniformed law enforcement officer, meeting the minimum requirement training standards for peace officer status in their state of residence, and who has completed the equivalent of two years as a peace officer with full police powers,” (*Starting a DARE Program*). The gateway theory, the use of less harmful substances precede and eventually lead to the use

of more harmful substances, was tantamount in DARE's approach. The less harmful substance that DARE often disposes as the gateway drug to harder drugs is marijuana. This is seen when DARE still states; "marijuana is both an illegal and harmful drug to the youth of this nation," ("Incorrect Posting on Position of Marijuana", *DARE America,* 2016). With the American youth being educated by a 'minimally trained peace officer' on drug use and the overly simple response to drug abuse of 'Just Say No', the apparent need for more legislation and control of people that are guilty of these criminal offenses approaches a new height. Such increases in the number of people guilty of these crimes led to an expansion of the criminal justice system.

This expansion hit a major obstacle in 1984; the American taxpayer no longer would no longer buy local or state bonds to fund the building of new prisons. "Lack of public funding led to the Federal Bureau of Prisons to turn to venture capital, with the formation of Corrections Corporation of America (CCA)," ("The Prison Boom", *Corrections Project,* 2008). CCA could lease their beds to the state or federal governments for a profit making opportunity. Critics of prison privatization accuse such a model of, "corruption, corrosive incentives like maximizing profits by removing essential services within the prison – from medical care, food, and clothing to staff cost and security," (*Corrections Project, 2008*). Additionally, this perverse symbiotic relationship between legislators and privatized prisons brings an overwhelming racist demographic of inmates. Such racist demographics can be seen when one analyzes, "the demographic make-up of today's prisons in the US being roughly 50 percent African-American, 35 percent Latino, and 15 percent White," (*Corrections Project,* 2008), while the US

population is roughly, “70 percent White, 12 percent African-American, and 15 percent Latino,” (Gibson, *United States Census Bureau*, 2012).

While venture capital was funding the expansion of the criminal justice system, pharmaceutical companies made synthetic cannabinoids legal with the introduction of Marinol. “Marinol is the only US FDA-approved synthetic cannabinoid and is prescribed for the treatment of cachexia (weight loss) in patients with AIDS and for the treatment of nausea and vomiting associated with cancer chemotherapy in patients,” (Armentano, *NORML,* 2005). The function of the medicine matches the medical ailments that patients of the Compassionate IND program had. While Marinol does offer, “limited relief to select patients,” (Armentano, 2005), the medication only includes one of the 66 analogous cannabinoid compounds. The cannabinoid compound that is present is synthetic THC. Marinol only offers a limited spectrum of benefits when compared to natural cannabis, (Armentano, 2005). The FDA classifies Marinol as a Schedule III drug, which “has a moderate to low potential for physical and psychological dependency,” (CSA). If the limited ability of synthetic derived THC has an accepted medical treatment in the United States, then the medical benefits of natural cannabis should be treated as the same class. The additional cannabinoids that are present in natural cannabis include, “CBD, naturally occurring terpenoids (oils), and flavonoids (phenols),” (Armentano, 2005). The medical properties of CBD include analgesic, antispasmodic (suppressing muscle spasms), anxiolytic (suppressing anxiety), antipsychotic, antinausea, and anti-rheumatoid arthritic properties, (Mechoulam, *Journal of Cannabis Therapeutics*), whereas Terpenoids exhibit anti-inflammatory properties and flavonoids possess antioxidant properties, (McPartland and Russo, *Journal of Cannabis Therapeutics*, 2002).

Natural cannabis has a wider scope of treatment potential than Marinol as well as natural cannabis can be genetically selected to have a combination of such properties to more properly address different medical conditions.

The 1980s drug war took flight after the death of Len Bias from a cocaine overdose just two days after getting signed to the Boston Celtics. Then, "Democratic House Speaker O'Neill saw this as the perfect opportunity to 'get tough on crime.'" (Sterling, PBS, 2014). The death of Len Bias further solidified the existence of the crack/cocaine epidemic that the United States faced in the early to mid-1980s. The atmosphere in the political realm at this time was one that allowed for The Anti-Drug Abuse Act of 1986 to pass before the November elections. This Act had provisions to reintroduce mandatory minimums that were repealed in 1970, even though, "no hearings were held with no experts on the relevant issues, no judges, no one from the Bureau of Prisons, or from any other office in the government, provided advice on the idea before it was rushed through the committee and into law," (Sterling, 2014). The Act did make a distinction between "major" and "serious" traffickers, with sentencing based on the amount of the controlled substance possessed at the time of the arrest. "Major" traffickers received a mandatory minimum sentence of 10 years while "serious" traffickers received a minimum sentence of 5 years. The only exception to receiving these mandatory minimums would be to give "substantial assistance". This practice is typified by testifying against another drug offender in exchange for a more lenient sentence, (Sterling, 2014). This bill, "shifted power away from judges- who are impartial- to prosecutors, who are not," (Sterling, 2014).

In 1988, The Anti-Drug Abuse Act was amended whose purpose is to have, "new and increased penalties for offenses related to drug trafficking, reducing drug demand through increased treatment and prevention efforts, and applies sanctions to put added pressure on drug users," (Anti-Drug Abuse Act, 100th Congress, 1988). The 1988 Anti-Drug Abuse Act achieved its purpose by, "denying certain Federal benefits for specific periods, imposed mandatory life imprisonment of certain three-time drug offenders, requiring the revocation of parole, probation, and other supervised release for anyone found to be in possession of an illegal drug, and included asset forfeiture amendments," (Act of 1988, 100th Congress). These additions to federal drug policy caused a 300 percent increase in the number of drug cases by 1994, (Sterling, 2014). The amending of the 1986 Anti-Drug Abuse Act caused the federal government's stance on drug abuse to become less rehabilitative as well as created unlawful incentives to seize and forfeit property of people in unwarranted cases. The profits that come from such asset forfeitures go to the law enforcement agencies that made the seizure. These Acts were one of the main causes of the:

150 percent increase in total jail populations from 1978 to 1989 as well as the transition from jails operating at 65 percent of rated capacity in 1978 to 108 percent of rated capacity in 1989. Data from the 1989 survey indicate that drug violations were directly responsible for 40 percent of the increase in jail populations between 1983 and 1989 which led to the building of 263 State prisons [which adds up to] 13 million square feet, a 58 percent increase in total housing space," (Greenfield, *US Department of Justice*, 1992).

The last provision of the Anti-Drug Abuse Act of 1988 that was implemented in January 1989 is the Office of National Drug Policy (ONDCP). The ONDCP, "develops and coordinates the policies and objectives of the federal government's program for reducing the use of illegal drugs by producing the National Drug Control Strategy, directing the United States anti-drug efforts and establishes a program, a budget, and guidelines for cooperation among federal, state, and local entities," (Office of National Drug Control Policy, 2008). The goals of such cooperation between these entities are to reduce illegal drug use, manufacturing and trafficking, and drug-related health consequences. This extension of the Anti-Drug Abuse Act of 1988 also requires employers contracting with the federal government in any way to meet certain requirements for providing a 'drug-free workplace.' The ONDCP makes compliance with its policies a precondition for receiving a federal grant or contract. Non-compliant contractors can have federal payments suspended indefinitely and having such federal payments suspended also makes non-compliant contractors unable to receive another grant for a period of up to five years. The ONDCP's initial budget was 7.864 billion dollars in 1989, (Foley, *ONDCP, 1989)*. By the end of 1989, the total number of inmates in Federal and State prisons and local jails stood at, "773,919 with an increase of 84,764 from 1988," (Beck, *Bureau of Justice Statistics*, 2007). The increase of 84,764 is a 13.5 percent growth, the highest rate increase in the Bureau of Prisons records. This year also had the most crowded prisons when compared to rated capacity. "Federal prisons, by 1990, were 151 percent of rated capacity where State prisons were 115 percent of rated capacity, and a total incarceration rate of 460 per 100,000 citizens, (Beck, *Bureau of Justice Statistics,* 2007). The Anti-Drug Abuse Acts of 1986 and 1988's provisions

increased the total populations of local jails by 58 percent, state prisons by 52 percent, and federal prisons by 64 percent, and the incarceration rate by 47 percent by 1990.

Such increases in the criminal justice system fostered the support of the Violent Crime Control and Law Enforcement Act of 1994 which is the, "the largest crime bill in the history of the United States. The Act provided for 100 thousand new police officers, $9.7 billion in funding for expanding prisons that were extremely overcrowded, $6.1 billion in funding for prevention programs, and $2.6 billion in additional funding for the FBI, DEA, … and other Justice Department components, (Violent Crime Control and Law Enforcement Act of 1994). The government's intention with such increases in budgets is clear. Its belief is consistent in that drug users and traffickers' prevalence is best combated through long sentencing versus rehabilitative programs. Furthermore, this Act established Drug Courts which provide supervision and specialized services to offenders with rehabilitation potential with $29 million dollars available in funding for 1995, (Violent Crime Control and Law Enforcement Act of 1994). These specialized services include the parole and probation instead of a jail sentence, but such measures are stripped with mandatory minimums explaining why the funding is nominal when compared to the increase in funding for incarceration efforts. The privatization of prisons through venture capital is more profitable than offering services rehabilitating drug offenders/abusers.

With the federal government passing the 'largest crime bill in United States' history, the state of California passed Proposition 215 also known as the Medical Use of Marijuana Initiative on November 6, 1996, (Proposition 215, *CA NORML,* 2013). This Proposition would be in direct conflict with federal legislation specifically the Schedule I

classification of cannabis. This would allow the points of the Shafer Commission and the LaGuardia Report to possibly come to fruition after 24 and 52 years of legislation that went against their findings. Proposition 215, "exempts patients and defined caregivers who possess or cultivate marijuana for medical treatment recommended by a physician from criminal laws which otherwise prohibit possession or cultivation," (California Proposition 215, *Ballotpedia.org*, 2008). The Proposition outlines special medical conditions to be able to receive a doctor's recommendation of medical marijuana. The medical conditions outlined by Proposition 215 are as follows, "Acquired immune deficiency syndrome (AIDS), anorexia, arthritis, cachexia, cancer, chronic pain, glaucoma, migraine, persistent muscle spasms, seizures, severe nausea, or any other chronic or persistent medical symptom that substantially limits the ability of the person to conduct one or more major life activities as define in the Americans with Disability Act of 1990 (Public Law 101-336)," (Proposition 215, 2008).

California Proposition 215 was the first medical marijuana ballot initiative passed at the state level; causing a conflict in the United States between medical marijuana advocates and those in support of a stronger federal presence with regards to the enforcement of domestic marijuana possession laws would be the cornerstone of States' rights issues for the coming century.

The federal government subsequently, yet independently passed the Aid Elimination Provision of the Higher Education Act in 1998. This "excludes students with drug convictions from receiving federal financial aid to attend institutions of higher education," (Angell, *Students for Sensible Drug Policy*, 2006). With the lack of federal financial aid, students are often so discouraged to return back to the two-year or four-year

university that was attended before the drug conviction. Angell's report goes on to say, "The Department of Education reports that 36 percent of those who left four-year institutions did not return within five years [of conviction]; 50 percent of those who left two-year institutions did not return within five years." The Aid Elimination Provision is fiscally irresponsible and accomplishes a goal that is the exact opposite intention of 'deterring drug use.' Its fiscally irresponsibility is seen with, "high school graduates are almost three times as likely to rely on costly public assistance programs [when compared to college graduates]," (Angell, 2006). Additionally, "the US Government Accountability Office indicated that it could find no evidence the penalty 'actually helped to deter drug use,'" (Angell, 2006). The breadth and impact of the Aid Elimination Provision is seen when Doug McVay Director of Research at Common Sense for Drug Policy mentions, "One in every 400 students applying for federal financial aid is rejected because of a drug conviction. While an analysis of Department of Education's numbers by a drug policy overhaul group found, a total of almost 200 thousand students have been denied financial aid from the 2000 to 2001 academic to the when the report was written in 2009. Indiana Representative Mark Souder, a Republican and sponsor of the legislation states, "The principle remains the same: The American taxpayer should not be subsidizing the educations of those students who are convicted of dealing or using illegal drugs," (McVay, CSDP, 2009). For example, "incarcerating one prisoner cost taxpayers $26,000 a year, while the average annual cost of a four-year public college is $5,836," (Angell, 2006). Representative Souder's contributors Sallie Mae, a publicly traded company that specializes in private student loans, has contributed over $22 thousand to Souder's campaign. Sallie Mae would not want people guilty of drug convictions to have

access to federal loans, which typically have a lower interest rate than private loans, but would rather drug offenders fund their college experience by its loans. The Aid Elimination Provision added that if convicted, "a student would be eligible before the end of the ineligibility period if he/she satisfactorily completes a drug rehabilitation program," (Aid Elimination Provision, 1998), but such rehabilitation program is grossly unavailable and often inadequate to aid with addiction because instead the American government fights this war through incarceration instead.

With the need of rehabilitation programs instead of incarceration for American citizens and students alike, "Proposition 36 passed with 61 percent approval in November 2000, through direct referendum, with $120 million allocated to drug treatment programs," (Ehlers, *Justice Policy Institute*, 2006). The goal of Proposition 36 was to divert nonviolent defendants, probationers, and parolees from incarceration into community-based substance abuse treatment programs," (Substance Abuse and Crime Prevention Act). Governor Arnold Schwarzenegger was questioning the success of Proposition 36 because only one-half of the drug offenders completed treatment. The success of Proposition 36 can be seen from total drug possession offenders. "The total in December 2000 was 19,736 and five years later in December 2005 the total was 14,325, a 27.4 decrease," (Ehlers, 2006). A recent cost analysis on Proposition 36 by UCLA's Integrated Substance Abuse Programs found that the state saved at least two and one-half dollars for every dollar spent on the program each year and saved four dollars for every person who successfully completed treatment. Total savings for the five years that Proposition 36 was funded, total savings for taxpayers of California amounts to $2.4 billion, a savings of $480 million a year. The efficacy of treating drug offenders with

rehabilitation versus incarceration keeps human rights in tact in addition costing less to state governments; Proposition 36 is the proof that the intent of the Prettyman Commission in 1963 is in fact true. Rehabilitation is part of a plan to develop a, "far broader range of alternatives for dealing with offenders-is based on the belief that, while there are some who must be completely segregated from society, there are many instances in which segregation does more harm than good," (The Challenge of Crime in a Free Society, 1966).

The story of retaliation between the federal and the state government of California seems to be the new States' rights issue of the 21st century. In 2001, the United States Supreme Court rejected its own standing of the Randall v. United States case in 1978. Then, the Supreme Court acknowledged the common law doctrine of medical necessity and permitted the Compassionate IND program for Randall to use medical marijuana. Now, 23 years later, the same institution that gave Randall and so many others hope changed their stance even though California legalized medical marijuana. The case came to, "recognize that the Court has discussed the possibility of a necessity defense without altogether rejecting it," (US v. Oakland Cannabis Buyers' Cooperative, 2001). The Court argues that a codified statute defines federal crimes not by common law; this viewpoint is reflected in a legal precedent established by the case of US v. Hudson (1812). Since the case, the Oakland Cannabis Buyers' Cooperative made the popularized medical marijuana card that registers each patient as part of the entire system of dispensaries of the Bay Area of California and has since issued over 200 thousand medical cards. The Cooperative is a, "not-for-profit organization that operates with a physician serving as a medical director. For a patient to become a member of the Cooperative, [he/she] must

provide a written statement from a treating, licensed physician assenting to marijuana therapy as outlined as Proposition 215. If accepted, the patient receives an identification card entitling [such individual] to obtain marijuana from the Cooperative," (US v. Oakland, 2001). The 1990s saw an overwhelming expanse in the number of people incarcerated in Federal and State prisons as well as local jails. For example, the total number of prisoners in Federal custody in 1990 was 58,838; in State custody totaled 684,544; and the number in local jails was 405,320. By 2000, the number of prisoners in Federal prisons climbed 127.6 percent to 133,921; the number in State prisons was 1,178,433; a 72 percent increase; while inmate populations in local jails climbed 53 percent to 621,149, (Beck, *Prisoners in 2000,* 2001). Additionally, at yearend 2000, privately operated facilities 87,369 inmates (5.8 percent of State and 10.7 percent of Federal inmates), (Beck, 2001), while marijuana arrests climbed from 326,850 to 734,497 in the 1990s as well.

With the inauguration of George W. Bush, the "War on Drugs" momentum was still in force. The 2000 Presidential race was the first time on the national level promoted decriminalized marijuana. "When President George W. Bush took office in 2001, drug use had risen to unacceptably high levels. Drug use by young people had doubled from 11 percent had used drugs in the past month in 1991 to 19 percent in 2001," (Robinson and Scherlen, "Lies, Damned Lies, and Drug War Statistics," *SUNY Press*, 2014). Under his presidency, the ONDCP would make itself accountable by producing short-term and longer-term goals in that statistic. One figure of the 2006 Strategy states, "a 10 percent reduction after two years and a 25 percent reduction in five years concerning the drug use among young people," (Robinson, 2014). Between 2001 and 2005, the ONDCP reports

demonstrates that, "19.4 percent of teens used an illicit drug in 2001, followed by 18.2 percent in 2002, 17.3 in 2003, 16.1 in 2004, and 15.7 in 2005, during the Presidency of George W. Bush, there was a 19 percent decrease in current drug use among grade 8, 10, and 12 students combined," (Robinson, 2014). The ONDCP accomplished its 5-year plan by a success of 76 percent, a fairly remarkable feat in such a short amount of time.

George W. Bush's legacy concerning drug policy includes the expansion in drug coverage for senior citizens through Medicare Part D in 2006. While the expansion in drug coverage for senior citizens is beneficial towards beneficiaries and, "Part D costs are $349 billion less than initial ten-year projections," (Funk, "Medicare Monday," *The Catalyst Pharma*, 2016), such has created some unintended externalities like bringing on a prescription opioid epidemic to those other than the beneficiaries of Medicare Part D. A team of economists, Pacula, Powell, and Taylor from the National Bureau of Economic Research (NBER) did an exhaustive study to see if there is a correlation between the increased legal, prescribed opiates to senior citizens through, "Medicare Part D enrollment and the increase in per capita opioid treatment admissions," (Pacula; Powell; Taylor, *National Bureau of Economic Research,* 2015). The first frame of reference is that ONDCP stated that its five-year goal ending in 2006 was more or less accomplished. Americans especially its 'young people' were using illicit drugs less frequently. In that same time period, however, "drug overdose deaths have risen steadily, and by 2009 they became a leading cause of death from injuries in the United States, exceeding deaths from motor vehicles, (Paulozzi, 2012), where opioids being the primary driver behind this upward trend," (Jones, Mack and Paulozzi, 2012). If 'young people', as stated by the ONDCP, were using illicit drugs less, then it would be understood that drug overdoses

would be decreasing as well. Senior citizens are legitimate medical users of the Medicare expansion in opioid coverage, but "nearly two-thirds of people who report nonmedical use of prescription drugs either get them or take them [without consent] from a friend or relative [who has Medicare Part D coverage]," (Jones, Mack and Paulozzi, 2014), while older family members with more than one opioid prescriptions would be easy targets for 'nonmedical users' to take these opioids from. The questionable correlation that Pacula, Powell, and Taylor have is well intended with these facts. The team from NBER build, "a measure of the seven most commonly abused opioid analgesics: fentanyl, hydrocodone, hydromorphone, meperidine, methadone, morphine, and oxycodone (as OxyContin as well as in other forms)," (NBER, 2015). Using data from the Centers for Medicare and Medicaid Services, per capita Medicare Part D enrollment numbers were construed by this data. Their findings show:

Data on the sale of the seven problematic opioid analgesics grew 62 percent between 2005 and 2010, opioid overdose deaths rise on average across the states 45 percent within the time period, and substance abuse treatment admissions more than doubled in the same five-year period. [These economists noted that,] upon implementation of Medicare Part D, the above median states incur a relative increase in per capita substance abuse treatments, providing further evidence of an increased in opioid abuse in states with high elderly share resulting from Part D. [Additionally], they estimate that each 10 percent increase in Part D enrollment caused a 7.4 percent increase in substance abuse treatment growth. The focus on the age groups between 12 and 54 because they are not directly impacted by the introduction of Part D. The results suggest

the introduction of Part D increased access to those not eligible for prescription drug coverage through Medicare, (NBER, 2015).

From 2001-2007, "total drug arrests increased from 1,586,902 with 723,628 of those for marijuana offenses," (Crime in the United States, *FBI,* 2002), to, "1,841,182 with 872,720 arrests coming from marijuana offenses in 2007," (Crime in the United States 2007, *United States Justice Department*, 2008). The ONDCP goals may have been improper and misguided when by 2007 total drug arrests increased 16 percent and marijuana arrests increased by 21 percent. Bush made his statement on reducing drug use 25 percent by 2006 when arrests increased by almost that amount. The Strategy made by George W. Bush have been similar to other Presidents which consists of decreasing drug use, but all have led to more drug arrests as well as marijuana arrests when more and more states have legalized medical marijuana.

The Medicare Part D expansion explains the increase in the supply of 'nonmedical' opioid use and its increase in opioid overdose and abuse. The research implies that 'nonmedical' users of these drugs typically start out on the legally prescribed opioid of a Medicare Part D recipient, then thereby becoming addicted and abusing the 'nonmedical' properties of such opioids. Once the cycle of addiction takes over the user, the family typically cuts the individual off from fears of enabling. The addict then turns to the cheaper supply of illegal and unregulated heroin available on the market.

As Bush was leaving office in January 2009, America was in the middle of the worst economic recession since the Great Depression all while embarking on a drug epidemic that was hitting young adults like nothing in modern history. The citizens of the

United States elected President Barrack Hussein Obama on the platform of CHANGE, who stated in 2008 that he supported the, "basic concept of using medical marijuana for the same purposes and with the same controls as other drugs [and was] not going to be using Justice Department resources to try to circumvent state laws," (DeAngelo, "The Cannabis Manifesto: A New Paradigm for Wellness, 2015). The irony and false intentions of Obama could not be more obvious when one realizes that the total amount of marijuana seized by the DEA nearly doubled in Obama's first year as President. Marijuana seizures by the DEA went from, "1,539 metric tons in 2008 to 2,980 metric tons in 2009, according to numbers disclosed by the agency as part of its budget request for 2011," (Elliot, *Toke of the Town*, 2010). If Obama and his administration truly supported the 'basic concept of using medical marijuana with the same controls as other drugs', then he would insist that Attorney General Loretta Lynch use her ability to, "transfer any drug between such schedules or remove any drug or other substance from the schedules if he/[she] finds that the drug or other substance does not meet the requirements for inclusion in any schedule [on the basis of] the findings prescribed by subsection (b) of section 812 of this Title," (Title 21 United States Code (USC) Controlled Substance Act, Section 811). Throughout the rest of Obama's first term, the DEA consistently raided lawful medical marijuana cooperatives. By 2012, 19 states had legalized medical marijuana use, but the DEA and other agencies still thwarted states' laws to enforce the Schedule I classification outlined by the Controlled Substance Act.

Upon the reelection of President Obama in 2012, the states of Colorado and Washington brought legalization of marijuana for recreational use to the ballot through direct referendum. Colorado, if passed, would add Amendment 64 to the State

Constitution, "permitting a person twenty-one of age or older to consume or possess limited amounts of marijuana while requiring the general assembly to enact an excise tax to be levied upon wholesales sales of marijuana; requiring that the first $40 million in revenue raised annual by such tax to be credited to the public school capital construction assistance fund," (Colorado Amendment 64, 2012). Washington had a similar opportunity arise in 2012, but this direct referendum stemmed from a ballot initiative. A ballot initiative is a process where valid signatures of registered voters are required to submit the proposal to the state legislature. Once an initiative gains approval of the state legislature it is then put on the state ballot in the general election. Initiative 502 was Washington's marijuana legalization and regulation proposal. Initiative 502 would also allow a 'person aged twenty-one or older to consume or possess limited amounts of marijuana' while, "generating new state and local tax revenue for education, health care, research, and substance abuse prevention," (Washington Marijuana Legalization and Regulation, 2012). Since the landmark decisions by the people of Colorado and Washington on legalizing cannabis in America since 1937, Alaska, Oregon, and Washington, D.C. have followed suit and 5 other states have legalized medical marijuana.

The federal government has amended the Farm Bill of 2014 to include Industrial Hemp Research. This amendment, "allows State Agriculture Departments, colleges, and universities to grow hemp, defined as the non-drug oilseed and fiber varieties of *Cannabis*, for academic or agricultural purposes," (Stansbury, *Vote Hemp*, 2014). The bill defines hemp, "as having less than .3 percent THC," (Stansbury, 2014). The introduction of this Farm Bill in 2014 and the subsequent change in the legal definition of 'marihuana' caused states to introduce CBD-exclusive medical marijuana bills within two months.

On March 25, 2014, Utah became the first state to legalize CBD oil which allows, "the growth of industrial hemp to aid with treatment resistant epileptic seizures," (Bloom, *Celeb Stoner,* 2015) to aid with epileptic seizure. Within three months of Utah legalizing CBD oil, 15 states follow behind. The order in which the states passed its own CBD bills are as follow: Alabama, Kentucky, Wisconsin, Mississippi, Tennessee, South Carolina, Iowa, Florida, North Carolina, Missouri, Virginia, Georgia, Oklahoma, Texas, Wyoming was the last state to pass its bill. Wyoming passed, "House Bill 32 on June 30, 2015, becoming the 16 state to legalize CBD oil," (Bloom, 2015). While these bills for CBD oil are not as expansive as Proposition 215 or Colorado's Amendment 64, it is a step in the right direction. Additionally, the efficacy of the medical treatment of such patients varies greatly state by state. For example, HB 1231 Mississippi's CBD oil bill, specifically Harper Grace's Law has not adequately supplied any medicine to any patients in the state despite being passed in 2014 even though Ole Miss has had a 'federal monopoly' on growing cannabis through the NIDA since 1968, and supplies the Compassionate IND Program and has done so since 1978.

Since Harper Grace's Law has not properly fulfilled the legislative accommodations, the people of Mississippi introduced Ballot Initiative in 2015. This measure would have legalized recreational marijuana as well as medical marijuana in similar conditions as Colorado, Washington, Alaska, Oregon, and Washington, D.C., but would have also required the Governor, "to pardon persons convicted of any and all nonviolent cannabis crimes against the State of Mississippi," (Ballot Initiative 48, 2015). BI 48 is the most progressive drug policy bill to date on the state level if it got the, "required number of certified signatures in each state congressional district, but was not

on the ballot the following year," (Ballot Initiative 48, 2015). In this chapter, I have analyzed major pieces of legislation and events with regards to the "War on Drugs" to set the stage of how and why the environment of cannabis law reform has grown into being accepted as widely as it is now.

In this chapter, I have analyzed major 'events' and pieces of federal legislation and their direct impacts on relative incarceration rates from the passage of the Marihuana Tax Stamp Act of 1937 to the present day events set the stage for the grassroots initiatives citizens throughout the United States employed seeking to find 'loopholes' around the Schedule I classification of *Cannabis sativa*.

Chapter II

The Schedule I Classification of *Cannabis Sativa*

In this chapter, I will investigate the 'three qualifiers' as outlined by the Controlled Substances Act of 1970, with regards to *Cannabis sativa*, and disqualify such allegations based on: the findings of the LaGuardia and Shafer Commission; the creation of the Compassionate Investigational New Drug Program; the use of Marinol for similar medical uses; the use of patents identifying and claiming 'medical appropriations' of *Cannabis sativa*; and the use of petitions from the National Organization for the Reform of Marijuana Laws in 1972, Dr. Jon Gettman and *High Times Magazine* in 1995, and the Coalition for Rescheduling for Cannabis in 2002. Additionally, while such findings have disqualified the allegations that *Cannabis sativa* has, 'a lack of accepted safety for use under medical supervision, no currently accepted medical use in the United States, and a high potential for abuse,' *Cannabis sativa* is still a Schedule I controlled substance.

While the move for the national decriminalization of cannabis has echoed since the LaGuardia Committee in 1944, the largest hindrance to the widespread use and research of cannabis is the Schedule I classification of it and of its derivatives. Again, the Schedule I classification is defined as having: a high potential for abuse, no currently accepted medical use, and a lack of accepted safety for its use (*Controlled Substances Act*, 1970). While these defining terms have dictated the legality of cannabis; several

federal commissions, federal programs, court decisions, patents, and change in public sentiment of cannabis have caused much strife with the scheduling of cannabis before, during, and after the passing of the Controlled Substances Act of 1970.

The history of cannabis laws in America begins in 1937 with the passing of the Marihuana Tax Act acting as a 'unifying federal measure,' (*Smoke Signals,* Lee), which endorsed a national prohibition of the medical aspects of cannabis and the industrial aspects of hemp. Once this Act was passed, Anslinger and influential colleagues convened the Marihuana Conference to discuss the agricultural, economic, and industrial aspects of hemp and the chemical and pharmacological uses and effects that Marihuana [cannabis] had on its users. The evidence gathered from the Marihuana Conference caused the prohibition of cannabis; its controversy is still relevant to this day. The evidence that would support the passing of the Marihuana Tax Act of 1937 is as follows:

Hemp was imperative to colonial America but its culture had naturally decreased from the increased prevalence of cheaper, competitive fibers like nylon, and the use of cannabis in its 'pure form' would show the 'ataxia action', (Loewe, *Marihuana Conference*, 1938).

If the market of hemp was shrinking caused from the introduction of cheaper alternatives, then the passing of the Marihuana Tax Stamp Act of 1937 is not necessary and the forces of economics would have lessened the need for such legislation. Additionally, Dr. S. Loewe, Pharmacologist at Cornell University Medical College, states that the 'pure form' of Marihuana was used intravenously on monkeys and dogs, and this method of ingestion presented an 'ataxia action.' This 'pure form' of Marihuana [cannabis], however, was not scientifically available until 1964, almost 30 years later.

Nico Escondido writer for *High Times*, a New York-based monthly magazine that advocates the legalization of cannabis, states that, "Dr. Raphael Mechoulam and his colleagues at the Weizmann Institute of Science were the first to synthesize [in its pure form] the primary psychoactive compound found in cannabis, THC, in 1964. The true intention of the Marihuana Conference is identical to the goal Marihuana Tax Stamp Act which include creating an artificial economic environment that allows for the cheaper alternatives to hemp while prohibiting the use of cannabis and all of its derivatives as a medicine. The contradictions between the truth and the façade of truth proposed by the federal government on cannabis begin with the Marihuana Conference. These contradictions are the building blocks of what would eventually outline the Controlled Substance Act of 1970, whose definition of cannabis and its derivatives has become the largest impediment to the use of cannabis as a medicine.

The first defining characteristic of a Schedule I drug is, "having a high potential for abuse," (CSA, 1970) According to *Center for Drug Evaluation and Research*, abuse potential refers, "to the likelihood that abuse will occur with a particular substance with central nervous system activity," ("Assessment of Abuse Potential of Drugs," *US Department of Health and Human Services*, January 2017). The 'ability' is caused from how quickly the substance enters the blood stream and how the drug is ingested. For example, drugs ingest intravenously are given a higher abuse potential than substances ingested orally. This is seen with the Schedule I classification of heroin, which is ingested intravenously, and the Schedule II classification of Oxycodone, which is ingested orally, even though these substances having similar composition and effects. To compare cannabis' abuse potential to other commonly used 'substances', Dr. Jack Henningfield,

chief of clinical pharmacology at the Addiction Research Center of the Government's National Institute on Drug Abuse (NIDA) and Dr. Neal Benowitz, professor at the University of California at San Francisco, ranked six substances (nicotine, heroin, cocaine, alcohol, caffeine, and marijuana) from 1 to 6, with one being the most serious, based on five areas. These areas include withdrawal, reinforcement, tolerance, dependence, and intoxication. Withdrawal defined as the presence and severity of characteristic withdrawal symptoms like irritability, fatigue, insomnia, and nausea; reinforcement is a measure of the substance's ability to get users to take substance [repeatedly], and in preference to other substances; tolerance as being the amount of a substance needed to satisfy increasing cravings for it, and the level of stable need that is eventually reached; dependence as being the difficulty to quit, the relapse rate, and the degree to which the substance will be used in the face of evidence that it causes harm.

The findings were as follows:

HENNINGFIELD RATINGS

Substance	Withdrawal	Reinforcement	Tolerance	Dependence	Intoxication
Nicotine	3	4	2	1	5
Heroin	2	2	1	2	2
Cocaine	4	1	4	3	3
Alcohol	1	3	3	4	1
Caffeine	5	6	5	5	6
Marijuana	6	5	6	6	4

BENOWITZ RATINGS

Substance	Withdrawal	Reinforcement	Tolerance	Dependence	Intoxication
Nicotine	3*	4	4	1	6
Heroin	2	2	2	2	2
Cocaine	3*	1	1	3	3
Alcohol	1	3	4	4	1
Caffeine	4	5	3	5	5
Marijuana	5	6	5	6	4

*equal ratings

(Henningfield and Benowitz, 1994).

In summation of their findings, the most similar substance compared to marijuana, based on the five areas as outlined by Henningfield and Benowitz, is caffeine. Caffeine, an unregulated and unmonitored substance, is something an average American consumes daily. Also, there have been minimal studies showing the long-term effects of caffeine when compared to the studies available for marijuana.

The LaGuardia Committee of 1944, the Prettyman Commission of 1963, and the Shafer Commission of 1972 were formed to: "appoint a special committee to make a thorough sociological investigation concerning the smoking of marihuana by large segments of our [New York City's] population," (LaGuardia, *NY Academy,* 1944), "design and put into operation a master research plan that would…be carried out on all aspects of narcotics and drug abuse," (Papers of John F. Kennedy, 1963), and, "conduct and record the most extensive examination of marijuana performed by the US government," (Nixon Tapes Show…, *CDSP,* 2002). These commissions challenge the 'high potential for abuse' that the Schedule I classification outlines for marijuana. For example, the LaGuardia Committee found that, "its [marijuana's] use does not: lead to addiction in the medical sense of the word or [to] morphine, heroin, or cocaine addiction, (LaGuardia, *NY Academy,* 1944). This finding of the LaGuardia Committee suggests that use of marijuana does not lead to the NIDA's definition of addiction, which includes, "a chronic, relapsing brain disease characterized by compulsive drug seeking and use, despite harmful consequences," (*The Basics,* NIDA, 2014).

The Prettyman Commission sought to reform treatment of drug offenders that the mandatory minimums of the 1950s brought. The reform that this commission is seeking for is seen with; "any legislation providing for [needing] federal regulation should not be

limited to barbiturates and amphetamines alone, [and] … to all other drugs having a potential for abuse that results in in psychotoxic and antisocial behavior," (Papers of John F. Kennedy, 1963). The Prettyman Commission argued that 'any legislation' should 'cover all drugs' including marijuana, but the existing conditions that would qualify for 'federal regulation' namely causing psychotoxic or antisocial behavior cannot be met for marijuana. This can be seen when Dr. ElSohly published *Potency Trends* in 2010 stating, "Cannabidiol (CBD) displays antipsychotic properties, [not psychotoxic properties], and where the LaGuardia Committee finds, "the use of [marijuana] the drug expresses the new feelings of self-confidence primarily through oral expression, [not resulting in antisocial behavior]," (Winslow, San Roman: CA, 1972).

The second characteristic of a Schedule I substance, as defined by the CSA of 1970, is 'having no currently accepted medical use." Prior to the passing of the CSA 1970 and the Marihuana Tax Act of 1937 evidence would exemplify the accepted medical use of cannabis. For example, Borchardt states, "almost six percent of all manufactured drugs… contained cannabis in one form of another," (Borchardt, *Forbes Magazine,* 2014). The use of cannabis extends beyond pre-1937 manufactured. This point is articulated when Lecia Bushak writer for *Medical Daily* states, "In ancient times, cannabis was used to alleviate pain and other ailments, [its use extends back to] 2737 BC, when Emperor Shen Neng… officially prescribed marijuana tea to treat various illnesses – including gout, rheumatism, malaria, and poor memory," (Bushak, 2016). During the Marihuana Conference of 1938, Dr. William Woodward, Legislative Council from the American Medical Association (AMA) states, "the medicinal use [of marijuana] has greatly decreased… because of the uncertainty of the drug… [But] to say… that the use

of the drug should be prevented by a prohibitive tax, loses sight of the fact that future investigation may show that there are substantial medical uses for cannabis," (Woodward, *Taxation of Marihuana).* Contrary to the 'ancient' accepted medical use of cannabis, the American Medical Association (AMA) removes cannabis from the US Pharmacopeia in 1942. The removal of cannabis from the US Pharmacopeia was caused by the creation of alternate medicines lessening the medical relevance of cannabis. Likewise, "physicians slowly turned away from using cannabis because of complex [regulations outlined by the Marihuana Tax Act of 1937]," (*Health Impact News,* 2014). The removal of cannabis derivatives from the US Pharmacopeia caused [cannabis], "to lose its remaining mantle of therapeutic legitimacy," (American Medical Association, *Procon.org*, Autumn 1970).

Questions began to arise concerning the typical qualities like its addictiveness, likelihood to be an agent in subsequent crimes, and ability to produce insanity among users proposed by the propaganda film *Reefer Madness* with the LaGuardia Committee. The Commission was accompanied by the New York Academy of Medicine. The first figure to acknowledge the questionable facts *Reefer Madness* alleged was Fiorello LaGuardia. As the Mayor of New York City, he appointed the New York Academy of Medicine to investigate the, "rumors [that] were recently circulated concerning the smoking of marihuana by large segments of [New York's] population and even by school children," (*LaGuardia Committee Report New York, USA (1944*). The findings of this report are:

> Its use does not lead to addiction; act as a gateway substance or stepping stone to use of other substances like cocaine or heroin; and is not a determining factor of

> major crimes, (LaGuardia, 1944), and under the influence of marijuana the basic personality structure of individual does not change but some of the more superficial aspects of his behavior show alteration, (*LaGuardia Committee Report New York, USA (1944*).

With the occurrence of the Great Depression, the unemployment rates of every demographic of people rose especially those among ethnic minorities. Even though the New York Academy of Medicine regarding marihuana as a relatively safe substance that is not addictive in the medical sense nor is it a gateway substance, The Boggs Act of 1952, The Narcotics Control Act of 1956, and testimonies of Anslinger caused marihuana offenders to receive punishment equal to that of cocaine and heroin offenders.

The creation of two different Presidential Commissions would create a, 'master research plan to be carried out on all aspects of narcotics and drug abuse,' (Papers of John F. Kennedy, 1963), would investigate alternatives between marijuana offenders and other drug offenders. Prior legislation made no difference between 'small peddlers' and 'traffickers', and the mandatory minimums enacted by President Eisenhower, "made rehabilitation of the convicted… virtually impossible, and since there is no hope of rehabilitation where there is no hope for parole," (Papers of John F. Kennedy, 1963). These Commissions' intent was to make rehabilitation of the convicted possible through parole or supervise probation.

The research of Dr. Raphael Mechoulam in the 1960s included the isolation of CBD in 1963 and tetrahydrocannabinol (THC) in 1964 in the 'pure form' as described by Dr. Loewe in the Marihuana Conference in 1938. Upon these discoveries by Mechoulam in the early 60s, Anthony Wile journalist for *The Daily Bell* interviews Dr. Mechoulam in

2014 to investigate further findings of his research. Dr. Mechoulam indicates, "the work on the plant [cannabis] has now led to the identification of a major physiological system, the endocannabinoid system (ECS), which seems to be involved with many human diseases," (Wile, *The Daily Bell*, 2014). The ECS is a group of endogenous cannabinoid receptors located in the mammalian brain and throughout the central and peripheral nervous systems. Dr. Mechoulam goes on to include that since isolating THC, scientists have discovered that, "THC mimics endocannabinoids (anandamide and 2-AG) [which are] of immense importance in the working of our body," (Wile, 2014). Wile and Dr. Mechoulam discuss the efficacy of synthetic [derived] cannabinoids against the natural plant including multiple natural cannabinoids. Mechoulam argues, "synthetic cannabinoids are… different than those in the plant (or the brain) and may be toxic [psychotoxic]," (Wile, 2014).

Shortly after the isolation of CBD and THC, the then National Institute on Mental Health awarded the University of Mississippi a contract making it, "the sole producer of federally legal marijuana [and has been] since 1968," (Rogers, *TIME Magazine*, 2015), which is capable of, "producing a research supply [of cannabis]," (Shen, *Nature.com*, 2014). To obtain the 'research supply' of cannabis, "researchers… must gain approval of the Department of Health and Human Services (HHS) or the National Institute on Drug Abuse (NIDA) [controlled by the Drug Enforcement Agency] as well as the Food and Drug Administration. The research center at Ole Miss, namely the Thad Cochran National Center for Natural Products Research, is capable of the, "cultivation, growing, harvesting, analyzing, and storing of research grade cannabis," (Rogers, 2015).

Josiah Hesse journalist for Mass Roots, described as the social network for the cannabis community, notes, “In 2016, marijuana is now more legal than ever… yet federal law prohibits scientists [and researchers] from conducting research using anything other than the government-grown [cannabis from Ole Miss]. When Dr. Kent Hutchison, professor at the University of Colorado, Boulder, conducted a study using the government-grown cannabis as; it was described “disgusting and low-potency,” by participants. The government-grown ‘research supply’ of cannabis, “from Mississippi, [was] freeze dried for years or months, then rehydrated before being smoked,” (Hesse, *MassRoots*, 2016), in Hutchison’s study. After participants smoked the cannabis in the lab, users made remarks like ‘what are you giving me’ and ‘I would never smoke this stuff,” (Hesse, 2016). The distaste of the Mississippi-grown cannabis supply caused Dr. Hutchison to suspend his studies. He argues, “the research [at Ole Miss] loses its validity [because participants] are not having a pleasant experience, like they do when they…smoke their medical-grade marijuana,” (Hesse, 2016). If the only ‘federally legal’ agent, the Thad Cochran National Center for Natural Products Research, cannot supply research, medical-grade marijuana, then other universities or agents should be able supply cannabis that is more adequate in supporting medical and research studies.

The court case of Leary v. United States examined the constitutionality of the Marihuana Tax Stamp Act. Leary faced charges of, “smuggling marijuana into the United States, charged transportation, facilitation of transportation, and concealment of marijuana after importation,” (Leary v. United States Supreme Court, 1969). Leary was in violation of Title 21 United States Code, Section 176a which required him to pay the transfer tax imposed by the Internal Revenue Code and was given the maximum penalties

of up to 20 years and fines up to $20,000 for such offenses," (Leary v. United States Supreme Court, 1969). Justice Harlan II repealed the Marihuana Tax Act of 1937 on the basis of the issuance of the tax stamp violated Americans' Fifth Amendment rights to due process and freedom against self-incrimination. The Tax Act of 1937 required citizens and Leary to be in a legal "double jeopardy." The Tax Act would cause people to incriminate themselves when trying to pay the transfer tax on cannabis/ hemp that they had. This situation would cause the user to pay a lawful tax on an illegal substance or to pay an illegal tax on a legal substance. The repeal of the Marihuana Tax Act of 1937 should have opened an area where cannabis derivatives could be used in 'manufactured drugs' and return to the US Pharmacopeia since the restrictions and regulations prohibiting its use was deemed unconstitutional, but the passing of the Comprehensive Drug Abuse Prevention and Controlled Act of 1970 closed the window on cannabis reform.

The Comprehensive Drug Abuse Prevention and Control Act of 1970 is the piece of legislation in America that came after the repealing of the Marihuana Tax Act and, "provides the legal basis for the government's war on drugs while consolidating laws on manufacturing and distributing drugs including narcotics, hallucinogens, steroids, and chemicals used to make controlled substances," (Title II, 1970). Title II of this Act is the Controlled Substances Act (CSA) outlines drugs into five different schedules or levels, higher schedules are perceived as being less addictive and have a more widely accepted medical use in the United States. With its inception, cannabis and all of its derivatives is placed in Schedule I that is defined as a substance that has, "a high potential for physical or psychological abuse, no accepted medical use in the United States, and a lack of

accepted safety for use of the substance," (*CSA,* 1970). This classification was, is, and will be the biggest hindrance on medical and recreational cannabis users alike throughout the United States.

With the strict classification of cannabis derivatives, Robert Randall was facing a lengthy incarceration sentence when he was charged with cultivation of marijuana in 1974. Randall was cultivating the marijuana plants on the basis of a 'medical necessity'. According to the American College of Medical Quality, Medical necessity is defined as, "accepted health care services and supplies provided by health care entities, appropriate to the evaluation and treatment of a disease, condition, illness or injury and consistent with the applicable standard of care," (American College of Medical Quality, 2010). District of Columbia Superior Court Judge James Washington dismissed the cultivation charges on the grounds that Randall's glaucoma was no longer treatable, "with an array of conventional drugs [because the drugs] became increasingly ineffective as [Randall's] tolerance increased [while under the care of 'local ophthalmologist' Dr. Benjamin Fine]…but after his arrest [Randall] participated in an experimental program conducted by Dr. Robert Hepler under the protection of the US government," (Gardmer, *Counter Punch,* 2009). Judge Washington argued:

[Randall's] blindness was shown by competent medical testimony to be the otherwise inevitable result of defendant's disease, no adverse effects from the smoking of marijuana have been demonstrated.... Medical evidence suggests that the medical prohibition is not well founded, (*Alliance of Cannabis Therapeutics,* 1999).

The dismissal of Robert Randall's charges granted and opened access to the 'research supply' of cannabis from Ole Miss. Randall became the first patient of medical

marijuana since the Tax Act of 1937. The decision of US v. Randall in 1976 allowed Randall 'prescriptive access' to marijuana. Shortly after, federal agencies disrupted this access. Facing imminent blindness, Randall, "brought suit against [the] FDA, DEA, the [NIDA], the Department of Justice, and the Department of Health, Education & Welfare," (*Significant Legal Cases*, 1999). The suit brought on an 'out-of-court settlement' (1999), providing a continuation of the 'prescriptive access' through the newly addressed Compassionate Investigational New Drug (IND) program. The court decision opened the Compassionate Investigational New Drug Program; thereby acknowledging cannabis' 'currently accepted medical use' for Randall's glaucoma which negates and diverts the Schedule I classification of cannabis derivatives. This program was created to allow 'patients afflicted by marijuana-responsive disorders [like Randall's glaucoma] and some orphan drugs', a medicine developed specifically to treat rare medical conditions. The Compassionate IND program expanded to allow patients with cancer, HIV/AIDS, and multiple sclerosis to have access to the 'research supply' of cannabis grown at Ole Miss. Currently, there are four patients that are still receiving this supply of cannabis. These patients are: Barbara Douglass, George McMahon, Elvy Musikka, and Irvin Rosenfeld. All of whom have been receiving over 320 pre-rolled marijuana cigarettes every month since the last patient was admitted in 1992, ("Who Are the Patients Receiving Medical Marijuana?", Procon.org, 2008). The Compassionate IND program's continuation shows explicitly how such federal agencies have been playing both sides of marijuana's illegality. These federal agencies [NIDA, FDA, and DEA] acknowledge some medical attributes of cannabis and harvest it for the disorders of a few while maintaining cannabis derivatives have no 'currently accepted medical use'. The

hypocrisy of these federal agencies begins with the Compassionate IND program and expands with years to come.

The divergence in the use of the medicinal properties of the plant and the potential to synthesize synthetic cannabinoids is seen when federal agencies allowed Solvay Pharmaceuticals, a Belgian chemical introduced Marinol in 1985, which contains, " a synthetically manufactured THC in sesame oil encapsulated in a soft gelatin capsule," (Gettman, *The Bulletin of Cannabis Reform*, 2007). Marinol was given a Schedule II classification following, "the FDA approval of the drug for marketing [in 1985]," (Gettman, 2007). Marinol was prescribed to treat the nausea and vomiting symptoms of cancer patients undergoing chemotherapy. The action of the FDA 'approving the drug for marketing' is hypocritical. Natural cannabis possessing THC is ruled as a Schedule I substance, while a synthetically derived cannabinoid has a 'currently accepted medical use'. The FDA's approval of Marinol shows how this scheduling of natural cannabis values profits of the treatment of patients. Marinol's efficacy is lower than natural cannabis when treating the prescribed uses. Marinol's synthetic composition contains only one of the over, "66 naturally occurring cannabinoids," (*National Academy of Sciences, Institute of Medicine*, 1999). Marinol is a useful medication, but its limited applications can be explained by the 'entourage effect', a phrase introduced by cannabinoid scientist Dr. Mechoulam. This effect is, as follows, "cannabinoids within the plant work together, or possess synergy, and affect the body [more similarly] to the body's own endocannabinoid system [than compared to isolated synthetic pharmaceutical drugs like Marinol]," (Burnett, *Medical Jane,* 2014). If the efficacy of natural cannabis is greater than the legal synthetic pharmaceutical drugs like Marinol, then natural cannabis

should have a greater ‘currently accepted medical use’ than Marinol. But the opposite of this is true for natural cannabis.

The medical uses of cannabinoids expanded in 1987 with US Patent 4876276. The Yissum Research Development Company of the Hebrew University of Jerusalem, which includes the research of Dr. Mechoulam, filed this patent. The patent involves, “the invention [of] (3S, 4S)-7-hydroxy-Δ6-tetrahydrocannabinol homologs and derivatives,” (Yissum Research Development Co. of the Hebrew University of Jerusalem, Patent 4876276, 1987). This invention removes, “the undesired side effects of [other] compounds,” while being of, “special utility in cases of acute and of chronic pain,” (Patent 4876276, 1987). This patent acknowledges cannabinoids are useful in treating debilitating pain. The motive behind applying for a patent is to have a protected interest in the discovery. The protected interest that the Yissum Research Development Company earned from Patent 4876276 is that no other researching agency can do identical research on this cannabinoid or its ‘homologes or derivatives’. Once again, if cannabis has ‘no currently accepted medical treatment, then this protected interest would have no utility to the research community. Patents that challenge the Schedule I classification of cannabis derivatives explain the pharmaceutical industry’s goals of maximizing profits at the expense of people who could benefit from their discoveries. The patents’ impact could potentially save lives if its discovery were used to treat acute and chronic pain. For example, the most widely used medicines to treat these ailments are opioids, drugs that are derived from opium. In 2014, there were, “18,893 overdose deaths related to prescription pain relievers [opioids] and 10,574 overdose deaths related to heroin,” (Center for Disease Control and Prevention, 2015). The number of deaths that is

associated with pain treatment far outnumbers the 16,121 deaths attributed to homicide in the United States in 2013, (Center for Disease Control and Prevention, 2015). US Patent 4876276 has the ability to save lives and restore balance to countless more lives if cannabis was not a Schedule I substance.

By 1990, federal agencies were using natural cannabis to treat patients with glaucoma, multiple sclerosis, nail patella syndrome, hereditary multiple exotoses, and HIV/AIDS through the Compassionate IND program, (Procon.org, 2008), and approved synthetic dronabinol to treat the nausea and vomiting that is associated with chemotherapy. In 1992, the FDA expanded, "Marinol's approved indications to include treatment of anorexia associated with weight loss in patients with AIDS," (Marshall, Drug Enforcement Agency, 1999). At this time the FDA, "was compelled to expand the nation's Compassionate IND program for medical marijuana to HIV+ people and Americans afflicted by neurologic disorders," ("What Is The Compassionate IND Program?",Procon.org, 2016). Instead of being granted access, "[the] FDA dumped hundreds of Compassionate IND applications in the trash and scores of patients were arbitrarily denied promised access to medical care," (*Procon.org,* 2016). The intent on closing the Compassionate IND program to new applicants while still supplying medical marijuana to existing patients should be clear. The intent was to quiet the growing community of people that would be eligible to the same privilege of Robert Randall's medical necessity of cannabis. This privilege was denied to all applicants on the basis of the, "profound contradiction in federal policy brought the medical prohibition into crisis," (Procon.org, 2016), so to avoid such crisis, the program was closed by President George H. W. Bush.

By this time, the court decisions of Robert Randall pointed to the medical necessity of marijuana for the symptoms of glaucoma by opening the research program for 'marijuana-responsive disorders', known as the Compassionate Investigational New Drug Program. This program was eventually expanded to treat symptoms of cancer, HIV/AIDS, and multiple sclerosis. The program's effectiveness and the approval of Marinol for treating symptoms of similar ailments caused the program to expire to new applicants in 1992. Cannabinoids' medical efficacy was expanded after the closing of the Compassionate IND program with US Patent 4876276 to include treating acute/chronic pain. The Yissum Research Development Company's discovery of the (3S, 4S) configuration of certain cannabinoids went on to deliver more medical opportunities for such molecules. The filing of US Patent 5538993 made claims that certain tetrahydrocannabinol-7-oic acid derivatives have, "analgesic, anti-emetic, sedative, anti-inflammatory, anti-glaucoma, or neuroprotective activities which contains as an active ingredient therapeutically effective quantity of a compound of claims 1, 9, 10, and 11 [pertaining to individual compound's structure]," (Mechoulam, Patent 5538993, 1994). If such discoveries made by the Yissum Research Development Company are true, then almost 650 thousand cancer patients undergoing chemotherapy suffering from nausea and vomiting ("Information for Health Care Providers," *CDC,* 2015), 9 million Americans being prescribed prescription sleep-aids (CBS News, 2013), 23 million Americans using Nonsteroidal anti-inflammatory drugs daily (Wilcox, Cryer, Triadafilopoulous, 2005), three million glaucoma patients (The Eye Diseases Prevalence Research Group, 2004), and 5.4 million Alzheimer's patients(Alzheimer's Association, 2017), a total of 41 million Americans would achieve some medical benefit from the claims of US Patent

5538993. With such expansive medical attribution claimed by US Patents 4876276 and 5538993, the state of California put Proposition 215 on the ballot in 1996 offering patients with similar medical symptoms the ability to use medical marijuana with a physician's recommendation.

Proposition 215 of 1996 outlined what medical conditions would be considered as 'marijuana-responsive disorders' and how patients suffering from these disorders would receive their medical marijuana. The 10 'serious medical conditions' outlined are, "Acquired immune deficiency syndrome (AIDS), anorexia, arthritis, cachexia, cancer, chronic pain, glaucoma, multiple sclerosis and the muscle spasms associated with it, migraines, and severe nausea," (Proposition 215, 2013). These conditions that are included by Proposition 215 are merely a comprehensive inclusion of the discoveries of the Yissum Research Development Company (Patents 4876276 and 5538993), the diagnoses receiving treatment through the Compassionate IND program, and the disorders Marinol was approved for treating. For example, cannabinoids effectively treat arthritis, chronic pain, and migraines with the literature and claims of the patents above. Likewise, Barbra and Kenny Jenks' applications were approved in 1991, allowing them to receive cannabis for AIDS, (Procon.org, 2008). Robert Randall's glaucoma gained access to the program in 1978, (Procon.org, 2008), Barbara Douglass gained access for her multiple sclerosis in 1991, and Irvin Rosenfeld became a patient for his Multiple Congenital Cartilaginous Exostoses, a form of benign cartilage-capped bone tumors, in 1982, (Procon.org, 2008). Additionally, the FDA to treat extreme nausea approved Marinol and vomiting associated with chemotherapy in 1985; its approval was expanded to treat the cachexia and anorexia of HIV/AIDS patients in 1992. The only inclusion of

Proposition 215 that was not available through federal literature is the clause stating, “any other chronic or persistent medical symptom that limits the ability of the person to conduct one or more major life activities as defined in the Americans with Disabilities Act of 1990 (ADA) [Public Law 101-336],” (Proposition 215, 2013). This inclusion gives patients wider access to medical marijuana without a prescribed medical condition. This clause allows patients to receive a medical opinion from recommending physicians to use or not use marijuana for their ‘chronic or persistent medical symptom’. Since the recommending doctors are not prescribing medical marijuana outside of the federally accepted ‘marijuana-responsive disorders’, rather they are simply giving patients having symptoms of common medical disorders advice with their health. A recommendation of marijuana by a physician then allows a patient to use marijuana legally in the state of California. With the protection of state law, neither patient nor recommending doctors are in conflict of federal law. The introduction of Proposition 215 in 1996, brought the use of ‘prescriptive access’ of marijuana from a few isolated patients, to a more ubiquitous arena for patients throughout the state. Additionally, with Proposition 64, *The Adult Use Marijuana Act*, expanded the legal access of marijuana to beyond medical use to include the legalization of use for all adults over the age of 21.

Subsequently, Aidan Hampson, Julius Axelrod, and Maurizio Grimaldi, all researchers at the National Institute of Health (NIH), published a study in 1998 finding, “cannabinoids protect [cells] from exposure to toxic levels of glutamate- a neurotransmitter that plays a role in a number of neurodegenerative disorders,” ("Cannabis: A Powerful Antioxidant," TruthOnPot.com, 2012). The NIH researchers were studying the antioxidant and neuroprotectant qualities of cannabinoids. Glutamate

and other oxidants, “attack macromolecules like protein, DNA, and lipids causing cellular/tissue damage,” (Irshad, Chaudhuri, Pubmed.gov, 2002). Both antioxidants and oxidants are produced inside the body, but antioxidants can be ingested, “exogenous sources like enzymes…, minerals…, and vitamins like vitamin A, C, and E,” (Pubmed.gov, 2002). The imbalance of glutamate and antioxidants, “remains the cause of several [disorders] like cardiovascular, neurological, renal, skin, respiratory, and liver diseases, malignancies, diabetes, inflammatory problems, aging, and different types of viral infections,” (2002). Findings of the 1998 study found that both, “THC/CBD to be 30 to 50 percent more effective than either antioxidant vitamins C and E [at protecting neurons from glutamate],” (Truthonpot.com, 2012). These findings pressured Hampson, Axelrod, and Grimaldi to file US Patent 6630507. This patent claims, “cannabinoids are found to have particular application as neuroprotectants, [and become] useful in the treatment and prophylaxis of wide variety of oxidation associated diseases,” (The Department of HHS, Patent 6630507, 1999). Later trials, “confirmed the therapeutic potential of [cannabinoids’] antioxidant properties in a variety of neurodegenerative and inflammatory disease models, including collagen-induced arthritis, infarction, Alzheimer’s [and Parkinson’s] disease, diabetes, myocardial ischemia, and atherosclerosis,” (Truthonpot.com, 2012). The extension of the medical appropriations for cannabis derivatives by the US Department of Health and Human Services shows how the federal government is playing both sides of the legality of cannabis. Federal agencies are arresting hundreds of thousands of citizens for treating ailments while governing bodies have approved patents acknowledging cannabis’ effectiveness for treating such ailments. Judge Washington’s ruling on Randall v. US included the medical

necessity defense of, “the evil sought to be averted was less heinous than that preformed to avoid it,” (United States v. Aguilar, 883 F. 2d 662, 693 (9th Cir. 1989). This ruling became the basis for the Compassionate IND program. The ruling insisted that using marijuana illegally is ‘less heinous’ that the ‘evil’ that is medical ailments. The inclusion of US Patent 6630507’s ‘prophylaxis’ clause extends the medical necessity defense Judge Washington ruled in favor of in 1978. The inclusion of marijuana being a preventative for a ‘wide variety of oxidation diseases’ would extend the medical necessity defense to patients using cannabinoids to ‘self-medicate’ symptoms that could lead to these diseases.

The expanded application of the ‘medical necessity’ of cannabis through various patents and Proposition 215 of California brought up a modern states’ rights issue concerning the CSA of 1970. The Oakland Cannabis Buyers’ Cooperative (OCBC) became the largest entity in California that distributed and dispensed medical cannabis to qualified patients. In 1996, California passed Proposition 215 allowing physicians to recommend cannabis for a number of ‘serious medical conditions’. This recommendation would then be used to grant a patient access to the dispensaries of medical cannabis grown by state-approved caregivers or growers. In 1998, the United States Court of Appeals Ninth District filed a petition against the OCBC and its executive director under the CSA. The Ninth District filed the injunction against the OCBC on the grounds that the CSA establishes, “a ‘closed’ system of drug distribution,” (United States v. Oakland Cannabis Buyers' Coop, 2016), for all controlled substances and, “authorizes transactions within ‘the legitimate distribution chain’”, (US v. OCBC), and while making the manufacture, distributing, or dispensing, or possession with intent to manufacture, distribute, or dispense,” (Section 401, CSA), of any controlled substance unlawful. The

OCBC understood the violation but insisted the Ninth District modify the injunction to permit, "medically necessary distributions," (US v. OCBC), but no such appropriation exists on the manufacturing or distributing of medical cannabis in the CSA. The court ruled with the CSA 1970 on the basis that marijuana has no 'currently accepted medical use' thereby having no 'medical necessity' because of the absolute language of the CSA. Since the 'medical necessity' defense exists under common law, the District Court of Appeals does not enjoy 'sound discretion', (Herman, Journal of Criminal Law and Criminology, 2002) because, "this discretion does not allow federal courts to ignore Congress' judgment expressed within legislation," (Herman, 2002). This breach of 'discretion' undoubtedly makes the injunction, "more limited in scope than the CSA," (Justia Law, 2006). The District Court's failure to weigh factors like public sentiment, the effect of depriving patients of cannabis, and the constitutionality of the CSA concerning intrastate cultivation of cannabis shows how federal agencies and courts are usurping powers not enumerated by the Constitution. The inclusion of 'having no currently accepted medical use' in the Schedule I classification of cannabis makes the challenge of defining 'medical necessity' perpetual. The District Court ruled in 2001, with the majority opinion delivered by Justice Clarence Thomas who ruled, "the statute reflects a determination that marijuana has no medical benefits worth of an exception; therefore, medical necessity is not a defense to manufacturing and distributing marijuana," (Chicago-Kent College of Law, 2016). The majority opinion of Justice Thomas is strengthened by the ruling of Justices David Souter and Ruth Ginsburg who added, "because necessity was raised in this case as a defense to distribution, the Court need not venture an opinion on whether the defense is available to anyone other than distributors,"

(Chicago-Kent College of Law). The ruling of US v. OCBC uphold the legal definition of a Schedule I controlled substances without any additional evidence other than the original qualifiers of a Schedule I controlled substances. This decision, however, does not explicitly remove a 'medical necessity' defense from patients; rather it just upholds that there is no inclusion for protection or exemption to parties aiding patients obtaining their medicine.

Shortly after the decision of US v. OCBC, Sumner Burstein, Robert Zurier, and Lawrence Recht of the University of Massachusetts file US Patent 6448288. The claims of the patent include, "non-psychoactive THC derivatives can decrease cell proliferation, a balance between cell divisions and cell loss, [whose] effect is not dependent on an increase of apoptosis," (Burstein, US Patent 6448288, 2001). Patent 6448288 includes the claim of THC derivatives inhibiting cell proliferation occur on the same receptor sites associated with psychoactivity, CB1 receptors, (Burstein, Pharmacol. Ther. 82:87-96, 1999). Thus, cannabinoids that do not bind to CB1 receptors will not inhibit cell proliferation or psychoactive effects on the use. In summation, Patent 6448288 claims, 'non-psychoactive THC derivatives' must bind to CB1 receptors to inhibit cell proliferation, or patients enduring the psychoactive effects of other THC derivatives present in natural cannabis will also achieve cell proliferation. In 1985, Marinol was approved to treat the nausea and vomiting associated with chemotherapy, but this patent claims that cannabinoids are an effective treatment instead of chemotherapy. The ongoing research by Sumner Burstein, from 1994, includes being an assignee with Dr. Mechoulam for US Patent 5538993. Both, Dr. Burstein and Dr. Mechoulam are pioneers in the endocannabinoid field. The effect of this patent is monumental in today's modern

medical arena. For example, 1 in 3 Americans will get cancer during their lifetime and more than 100 billion dollars was spent on chemotherapy and other cancer-related treatments in 2014, (Snyder, SOTT, 2015).

Federal agencies' intent is seen when patents are approved acknowledging medicinal appropriations for cannabinoids, but the tide shifted from researchers acquiring intellectual property to a milieu of pharmaceutical interests racing at the potential medical discoveries of cannabinoids. The approval of US Patent 20130059018 should promote an environment where patients could use such medical discoveries in the form of pharmaceutical compounds or the natural plant, but such agencies permit pharmaceutical companies to make profits, all while would-be patients are being incarcerated for using the plant that made such pharmaceutical discoveries possible. The invention of this patent includes, "the use of phytocannabinoids, either in an isolated form or in the form of a botanical drug substance (BDS) as a prophylactic or in the treatment of [prostate, breast, skin, glioma, colon, or lung] cancer," (Parolaro, Patent 20130059018, 2011). Phytocannabinoids are cannabinoids that originate from nature and can be found in the cannabis plant that can be isolated or present as a botanical drug substance (BDS). The approval of US Patent 20130059018 shows Otsuka Pharmaceutical Co. and GW Pharmaceuticals' intent to promote an environment where patients are left to decide between health and money The inventions of patent 20130059018 relate to a, " method of treating a patient [by] administering a therapeutically effective amount of a cannabis plant extract comprising of a phytocannabinoid (PC) and a non-phytocannabinoid component, where the PC component comprises more than 50 percent (w/w) of the extract and the principle [main cannabinoid present in extract] is not THC or CBD

[instead it is Cannabichromene (CBC), Cannabichromenic acid (CBCV), Cannabidiolic acid (CBDA), Cannabidvarin (CBDV), Cannabigerol (CBG), Cannbigerol propyl variant (CBGV), Cannabicyclol (CBL), Cannabinol (CBN), Cannabinol propyl variant (CBNV), Cannabitriol (CBO), Tetrahydrocannabinolic acid (THCA), Tetrahydrocannabivarin (THCV), or Tetrahydrocannabivarinic acid (THCVA)], (Patent 20130059018, 2011). The inventions add to the list of medical conditions in which cannabinoids is a prophylactic. The claims made by this patent include cannabinoids, "are able to promote the reemergence of apoptosis so that some tumors will heed the signals, stop dividing, and die," and, "turn off the signals tumors send out to promote angiogenesis, growth of new blood vessels," (Patent 20130059018, 2011). The findings of Patent 20130059018 would eventually lead to the approval of Sativex (nabiximols), a botanical drug that contains both THC and CBD. The inventions of this patent could allow patients to use such medical discoveries in the form of pharmaceutical compounds or the natural plant, but federal agencies approve pharmaceutical companies to make profits, all while would-be patients are being incarcerated for using the plant that made such pharmaceutical discoveries possible.

GW Pharmaceuticals' findings do not stop with Patent 20130059018 concerning cannabinoids. GW Pharmaceuticals filed US Patent 20150359755 in 2015 shortly after 16 states legalized CBD oil for the treatment of epileptic seizures. The patent closely followed the legislation pursued by these states. The patent's invention, "relates to the use of CBD for the reduction of total convulsive seizure frequency in the treatment of 'treatment-resistant epilepsy' (TRE)," (Guy, Patent 20150359755, 2015). The invention of this patent is to be used in conjunction with common anti-epileptic drugs (AED) like,

"clobazam, levetiracetam, phenobarbital, and zonisamide," (Patent 20150359755, 2015). One study done during research included a sample of, "27 children and young adults with severe, childhood onset TRE were tested with a highly purified extract of CBD obtained from a cannabis plant. After 12 weeks of CBD therapy, 48 percent of patients had an equal to or greater than >50 percent reduction in seizures. Additionally, none of the 27 subjects withdrew during the 3-month treatment period," (Patent 20150359755, 2015). As with the prior patent of GW Pharmaceuticals, this patent led to the eventual approval process of Epidiolex, a CBD pharmaceutical composition in sesame oil. Currently, Epidiolex is in the process of being approved by the FDA, and is estimated by, "Analysts [at] GW Pharmaceuticals to cost $2,500 to $5,000 a month," (Pollack, *New York Times*, 2016). With such high prices, one could see why natural cannabis extracts are still being used even though extracts are now legal. Programs like the Compassionate IND, patents by various organizations, court decisions, and ballot initiatives by states legalizing medical marijuana show how federal agencies are playing both sides of the illegality of cannabis. Such things challenge and even show how illegitimate the 'having no currently accepted medical use' claim to cannabis and its cannabinoids is. Profits of the pharmaceutical industry is keeping cannabis illegal and out of the United States Pharmacopeia. Since the opening of the Compassionate IND program in 1978, the medical appropriations of cannabis has expanded to treat the ailments of AIDS, anorexia, arthritis, cachexia, chronic pain, glaucoma, multiple sclerosis, muscle spasticity, migraines, nausea, a 'wide variety of oxidation associated diseases' like Alzheimer's and Parkinson's disease, inhibits cell proliferation, insomnia, cancer, and epilepsy. Additionally, it has been acknowledged that cannabis and cannabinoids act as a

prophylactic to these ailments as well. The claim of 'having no currently accepted medical use' is asinine when there are 25 states permitting medical marijuana for a wide variety of ailments similar to California, 16 states that permit the use of CBD to treat epileptic seizures, and multiple pharmaceutical drugs consisting of cannabinoids.

The passing of the CSA in 1970 gave the Bureau of Narcotics and Dangerous Drugs and now the DEA, "the authority to schedule drugs (alongside other federal agencies) and to license facilities for the production and use of scheduled drugs in federally-approved research [like the M-Project at Ole Miss that is licensed to produce and use cannabis]. [The DEA and 'other federal agencies] may initiate proceedings [to reschedule]. Additionally, interested parties including medical or pharmacy associations, public, interest groups, state or local governments, or individual citizens may petition the DEA and 'other federal agencies' to add, delete, or change the schedule of a drug or substance," (21 USC CSA, Section 811). The guidance of the Shafer Commission suggested the federal decriminalization of cannabis, but federal agencies with the support of President Nixon kept cannabis a Schedule I drug. In response to this staunch disapproval of the findings by the Commission, public interest group the National Organization for the Reform of Marijuana Laws (NORML), "filed the first petition to reschedule marijuana…[and] the DEA assumed responsibility for rescheduling petitions [after its establishment in 1973]," ("The DEA: Four Decades of Impeding and Rejecting Science," *Multidisciplinary Association for Psychedelic Studies,* 2014). NORML sought redress of the original petition with the lawsuit of NORML v. E Ingersoll in 1974. The lawsuit was filed because, "the petition which sought to initiate a role-making proceeding looking toward a change in the control applicable to marihuana under the CSA, but the

petition was not accepted for filing on the ground that outstanding treaty commitments [Single Convention on Narcotics Drugs] precludes any executive relief, and that becomes the crucial question before the court," (NORML v. E Ingersoll, 1974). The lawsuit filed in 1974 was to redress the 'outstanding treaty commitments' of the Single Convention. The Court of Appeals for the District of Columbia Circuit, "orders the DEA to fulfill the requirements to review and act on such petitions," ("The DEA: Four Decades of Impeding and Rejecting Science," *Multidisciplinary Association for Psychedelic Studies*, 2014). After years of not 'fulfilling procedural requirements', NORML sought redress through two lawsuits filed in 1976 and 1980. The case NORML v. DEA, "represents yet another phase in the ongoing controversy between NORML and DEA. The respondent has resisted these efforts by citing United States treaty obligations under the Single Convention on Narcotic Drugs, which prescribes different [Scheduling] for various parts of the cannabis plant," (NORML v. DEA, 1977). The discrepancies of the Single Convention concerning cannabis is one that that excludes, "the separated leaves from the [flowering or fruiting tops] from the defining characteristics of 'cannabis' and 'resin,'" (NORML v. DEA). This exclusion of the leaves separated from the 'flowering tops' of the plants suggests that the [DEA], "agency should separately consider rescheduling on the specific distinguishing factor outlined by the Single Convention," (NORML v. DEA). This 'separate rescheduling' eliminates the original claim made by respondent of 'outstanding treaty requirements' as the reason to not accept the original petition. DEA Administrator Law Judge (ALJ) Parker ruled in favor of NORML by stating, "cannabis' and 'cannabis resin' as defined by the treaty could be rescheduled to CSA II, cannabis leaves could be rescheduled to CSA Schedule V, and cannabis seeds and 'synthetic

cannabis' could be decontrolled," (NORML v. DEA). Regardless of the recommendations of ALJ Parker, "Acting Administrator Henry Dogin denied NORML's petition for rescheduling 'in all aspects,'" (NORML v. DEA). Ultimately, through this lawsuit and the unpublished lawsuit between NORML and the DEA, the Court of Appeals, "ordered the DEA to begin the scientific and medical evaluations required by the NORML petition," ("The DEA: Four Decades of Impeding and Rejecting Science," *Multidisciplinary Association for Psychedelic Studies*, 2014). Once the years of 'scientific and medical evaluations' were completed through the Department of HEW, *Opinion and Recommended Ruling, Findings of Fact, Conclusions of Law and Decision of ALJ* by ALJ Francis Young would, "determine whether the marijuana plant considered as a whole may lawfully be transferred from Schedule I to Schedule II, and such placement would mean physicians in the United States would not violate federal law by prescribing marijuana for their patients for legitimate therapeutic purposes," (Statement by ALJ Francis Young, US Department of Justice, 1988). The hearings in 1988 would allow the Alliance for Cannabis Therapeutics, Cannabis Corporation of America, and NORML to see the transfer of marijuana to Schedule II, and the Agency [DEA], the National Federation of Parents for Drug-Free Youth, and the International Association of Chiefs of Police contending marijuana should remain in Schedule I," (Statement by ALJ Francis Young, 1988). The principle issue as stated by ALJ Young includes, "whether the marijuana plant… may lawfully be transferred from Schedule I to II, arguing whether the plant has a currently accepted medical treatment and whether there is a lack of accepted safety for use of the marijuana plant under medical supervision," (ALJ Young, 1988). These 'scientific and medical evaluations' amend the original petition by NORML to

reschedule the plant to Schedule II not Schedule IV or V, "thus the dispute between the two sides in this proceeding is narrowed to whether or not marijuana has a currently accepted use in treatment in the US, and whether or not there is a lack of accepted safety for use of marijuana under medical supervision," (1988). Concerning the 'acceptance of use in treatment', "it is clear that many people find marijuana to have, in the words of the CSA, an 'accepted medical use' in effecting relief for cancer, glaucoma, and multiple sclerosis patients…and the Act [CSA] does not specify by whom a drug or substance must be 'accepted [for] medical use in the treatment' in order to meet the Act's 'accepted' requirement for placement in Schedule II," (1988). Originally, it was determined that the Act's basic determination is made by the medical community not any part of the federal government, thus the medical community should be the agents voicing for the 'acceptance' of the marijuana plant as a viable medicine treating some relief for cancer patients. The statement by ALJ Young goes on to state, "this record shows a great many physicians, and others, to have 'accepted' marijuana as having medical use in the treatment of cancer, and the overwhelming preponderance of the evidence in this record establishes that marijuana has a currently accepted medical use in the treatment for nausea and vomiting resulting from chemotherapy patients in some cancer patients. To conclude otherwise, on this record, would be unreasonable, arbitrary, and capricious," (1988). Evidence goes on say the same for the medical condition of glaucoma. Ophthalmologists, Dr. John C. Merritt and Dr. Richard D. North, "serving as a medical officer in ophthalmology for the Department of HEW and has worked with the Public Health Service and FDA," (1988), have experience with Robert Randall, whose court case's decision opened the Compassionate IND program in 1978. Regardless of the

experience of both doctors, ALJ Young decides, "that marijuana for the treatment of glaucoma falls far, far short of the quantum of evidence that shows marijuana is accepted for treatment of emesis in cancer patients," (1988). The findings for marijuana being 'currently accepted' for the treatment of multiple sclerosis and accompanying muscle spasms would be like that of cancer. The statement prepared by ALJ Young states, "the administrative law judge concludes that, within the meaning of the Act, 21 USC, Section 812, marijuana 'has a currently accepted medical treatment for spasticity resulting from multiple sclerosis and other causes. It would be unreasonable, arbitrary, and capricious to find otherwise. These decisions determining the 'accepted use' of marijuana as part of a medical treatment sides with the ongoing federal Compassionate IND program. In fact, some of the patients that testified were approved applicants to the program, namely Irvin Rosenfeld and Robert Randall.

The second 'subsidiary issue' to be argued with this statement is, "with respect to whether or not there is a 'lack of accepted safety for use of [marijuana] under medical supervision," (1988). The one determining factor mentioned in the report by ALJ is, "when dealing with drug safety possibility of lethal effects is the most obvious concern," (1988). The contrast between legal drugs that do not have a 'lack of accepted safety' and marijuana is exemplified by the statement, "nearly all [lawfully prescribed] medicines have toxic, potentially lethal effects, but marijuana is not such a substance. There is no record in the extensive medical literature describing a proven, documented cannabis-induced fatality," (1988). If one medicine that has never had described 'lethal effects', then its 'lack of accepted use under medical supervision' is 'unreasonable, arbitrary, and capricious'. The therapeutic ratio is a typical medical way to measure the safety of a

substance. This ratio defines the difference between a normal effective dose and a dose that is capable of inducing adverse, often lethal effects. For example, “the therapeutic ratio of the commonly used over-the-counter analgesic, aspirin, is 1:20, meaning someone who takes 20 times the normal dose of aspirin will experience some adverse effects. Additionally, the therapeutic ratio for prescribed drugs is commonly around 1:10, and many prescriptive drugs used to treat patients with cancer, glaucoma, and multiple sclerosis are highly toxic, with ratios around1: 1.5. By contrast, marijuana’s therapeutic ratio is around 1: 20,000- 40,000,” Francis Young states directly on the record, “in strict medical terms marijuana is far safer than many foods we commonly consume. Marijuana, in its natural form, is one of the safest therapeutically active substances to man. By any measure of rational analysis marijuana can be safely used within a supervised routine of medical care,” (Francis Young, 1988). This statement on marijuana exemplifies the reason why the DEA and other federal agencies are so timid to move forward on reclassifying. If a viable medicine that has been used for a period of over 4000 years with never causing a lethal overdose existed, then pharmaceutical companies’ profits would dwindle instantaneously. On the grounds of marijuana being accepted as safe in the use of medical supervision, “acceptance by a significant minority of doctors is all that can be reasonably required, and this record makes it abundantly clear that such acceptance exists in the United States,” (1988). If the two ‘subsidiary issues’ of marijuana are resolved, namely its lack of safety under medical supervision and its lack of accepted medical uses is overruled, then marijuana, as a whole plant, should be rescheduled to a minimum of a Schedule II drug, where the therapeutic dose is quantifiable and astronomically lower than that of marijuana. The findings, “based upon the foregoing facts and reasons, the

administrative law judge concludes that the provisions of the Act permit and require the transfer of marijuana from Schedule I to II, a scheduling that it would be employed in treatment by physicians in proper cases," (1988). The collective findings of various doctors allowed marijuana to have an 'accepted medical uses' for the conditions of muscle spasticity and cancer, while maintaining an acceptance for the safety of use of marijuana under medical supervision. ALJ Young's final statement includes, "that it be unreasonable, arbitrary, and capricious for the DEA to continue to stand between those sufferers and the benefits of this substance in light of the evidence in this record," (1988). Such 'evidence in this record' made the administrative law judge, "recommend that the [DEA] Administrator [John Lawn] conclude that the marijuana plant considered as a whole has a currently accepted medical use in treatment, that there is no lack of accepted safety for use of it under medical supervision, and that it may lawfully be transferred from Schedule I to II," (1988). Similar to prior legislative acts that would lessen the prohibition of marijuana, the ruling of ALJ Francis Young was ultimately denied. DEA Administrator denied the request of NORML, Alliance for Cannabis Therapeutics, and Cannabis Corporation of America in December 1989. The case of Alliance for Cannabis Therapeutics v. DEA was the final attempt to petition governing bodies to reschedule the marijuana plant as a whole from Schedule I to Schedule II, but the Court of Appeals for the District of Columbia, "affirmed the DEA Administrator's power to overrule Judge Young's decision," ("The DEA: Four Decades of Impeding and Rejecting Science," *Multidisciplinary Association for Psychedelic Studies*, 2014). The case of Alliance for Cannabis Therapeutics v. DEA was decided on February 18, 1994, for the reasons that, "the findings are consistent with the view that only rigorous scientific proof can satisfy

the CSA's 'currently accepted medical use' requirement," (Alliance for Cannabis Therapeutics v. DEA, 1994), and the statement by ALJ Francis Young recorded only one instance where a doctor relied on 'rigorous scientific proof' instead of anecdotal evidence from patients. The petitioned originally filed by NORML ends nearly 22 years after its inception. Meanwhile, the FDA reschedules synthetically-derived THC, dronabinol, (Marinol) from Schedule I to Schedule II in 1985, and approves to be marketed for the treatment of nausea and vomiting of chemotherapy (cancer) patients ("The DEA: Four Decades of Impeding and Rejecting Science," *Multidisciplinary Association for Psychedelic Studies*, 2014).

Only 18 months lapsed between the Alliance of Cannabis Therapeutics v. DEA's decision and the second petition's filing to reschedule marijuana. On July 10, 1995, Jon Gettman, contributor to *High Times Magazine*, petitioned the DEA, "to initiate role making proceedings under the provisions of the CSA," (Denial of Petition, US DOJ, 2003). The petition filed by Jon Gettman, "focused primarily on challenging whether cannabis has the 'high potential for abuse' required for [Schedule I and II of the CSA]," (Gettman, *Rescheduling Cannabis*, 2004). If the argument made by Gettman was supported by the DEA, then marijuana would have been transferred to Schedule III, IV, or V. The petition was denied on the grounds that its, "contention is that, marijuana has less than a 'high potential for abuse' commensurate with Schedules I and II and, therefore, it cannot be classified in either of these two schedules," (*Denial of Petition*, US Department of Justice, 2003). The petition failed to assert that marijuana has either a currently accepted medical use in treatment in the United States or an accepted safety for use under medical supervision. Since there was no contention made by the petition

concerning the other two defining characteristics the DEA denied the claim that marijuana has less than a 'high potential for abuse' by stating, "it is undisputed that the drug has at least some potential for abuse sufficient to warrant control under the CSA, the drug must remain in Schedule I," (US DOJ, 2003). The Court of Appeals eventually upheld the decision made by the DEA on the basis that, "John Gettman was not a medical marijuana patient and [he] did not have standing to take the case to federal courts," (Gettman, *High Times Magazine,* 2012). The CRC is the, "association of public-interest groups, medical cannabis patients, and additional supporters," (Gettman, Marijuana Research, 2006). The members of CRC include, "the American Alliance for Medical Cannabis, Americans for Safe Access, Drug Policy Forum of Texas, *High Times* Magazine, NORML, OCBC, and Patients Out of Time," (Gettman, 2006). These members represent patients from the largest medical marijuana patient coalition in the United States, OCBC, an organization that represented the patients of the Compassionate IND program through the works of Robert Randall, and the largest nonprofit lobbying organization working on the reform of marijuana [cannabis laws, NORML. The CRC is arguably the largest coalition whose interest is the reform of marijuana laws.

To combat the decision made by the Court of Appeals, John Gettman created the Coalition for Rescheduling Cannabis (CRC) and, "submitted a new petition to the DEA in October, 2002 whose purpose is to have marijuana removed from Schedule I and rescheduled as 'cannabis' in either Schedule III, IV, or V," (Petition to Reschedule Cannabis (Marijuana), CRC, 2002). This new petition filed by the CRC challenged the, "accepted medical use in the United States, the safety of use, dependence liability, and abuse potential [of cannabis]," (CRC, 2002). The *Petition to Reschedule Cannabis* (PRC)

was filed by the CRC on October 9, 2002. The critical difference between the PRC and the other petitions previously filed is the fact that the CRC is a coalition of high-ranking reform agencies and the timing. At this point in 2002, California, Alaska, Oregon, Washington (state), Maine, Hawaii, Colorado, and Nevada had allowed and acknowledged the medical use of cannabis. The PRC, "argued that [cannabis] should be rescheduled because it does have some accepted medical use in the United States, that it is safe to use, and that it has relatively low dependence and abuse liabilities [as compared to less regulated substances in the US Pharmacopeia]," ("The DEA: Four Decades of Impeding and Rejecting Science," *Multidisciplinary Association for Psychedelic Studies*, 2014). The petition's intent is not to declassify and leave cannabis unregulated, "but to have marijuana removed from Schedule I and rescheduled as 'cannabis' in either Schedule III, IV, V," (Petition to Reschedule Cannabis, CRC, 2002). The petition argues that the federal scheduling of marijuana is not well endorsed by state or local governments by stating, "only 6 states [have] marijuana scheduling that conforms to federal status and 39 have a separate schedule labeled 'marijuana,'" (Holden, Criminal Justice Association, 1991). A majority, 78 percent, of states has marijuana classified in a less restrictive than the federal status. Conversely, a vast minority of states, 12 percent, has legislation that in accordance with the federal regulation of marijuana. The divide in public between state and federal government should be a kindling for reform. The DEA and the Department of HHS ascertains that marijuana has no accepted medical use in the United States even though, "the right of doctors to recommend marijuana for medical use under state law has been upheld in federal court," (Conant v. McCaffrey, 2000). In this case the court recognized that physicians had a, "right to recommend or discuss medical

marijuana use with their patient, and such actions could not [be used in consideration] by the federal government as a basis to revoke [a] physician's license to dispense [and prescribe other, lawful] controlled substances," (PRC, 2002). If federal courts give protection to physicians recommending medical cannabis to patients, then these doctors would argue that marijuana does have an accepted medical use.

Cannabis' acceptance for medical cannabis has increased since the people of California passed Proposition 215 in 1996. In the 6 years after Proposition 215, 7 other states elected to the do the same concerning marijuana reform. Additionally, its [cannabis] acceptance is, "increasingly recognized by health care professionals and the medical community, include the Institute of Medicine [1982 and 1999]," (PRC, 2002). Along with the Institute of Medicine, notable organizations that express support to grant access for therapeutic cannabis include the, "Alliance for Cannabis Therapeutics, the American Civil Liberties Union, Kaiser Permanente, the National Association for Public Health Policy, the National Association of Attorneys General, and Patients Out of Time," (PRC, 2002). The widening breadth of acceptance of 'access to therapeutic [medical] cannabis is seen when one notices that the range includes health insurance companies to associations for medicine, public policy, and criminal law. The acceptance and shift in public sentiment is also seen when the 'country's largest physician's organization,' ("The DEA: Four Decades of Impeding and Rejecting Science," *Multidisciplinary Association for Psychedelic Studies*, 2014), the American Medical Association (AMA) and the, "547 delegates…asserted its opposition to criminalizing patients [who use cannabis] and doctors [who recommend it]," (PRC, 2002), making them in compliance with Conant v. McCaffrey.

The PRC then goes on to describe patients' experiences with medical cannabis. The changing sentiment of medical cannabis can be observed by the anecdote from Lynn Nofziger, former White House director of communication and chief speechwriter of President Ronald Reagan, who states, "here is one right-wing Republican who supports… medical access to [cannabis because] my daughter was undergoing chemotherapy and suffering from vomiting and nausea, and the synthetic Marinol [did not] help her situation, [but] the illegally obtained marijuana [helped] her keep her food down and even gain weight. A doctor should have ever possible medication – including marijuana—in [their] armamentarium," (Nofziger, 1999).

The statement above shows the ever-entrenched metamorphosis in public sentiment concerning medical cannabis. Likewise, a report from the Institute of Medicine done in 1999 found that, "all [100 percent of the patients surveyed] reported that marijuana relieved nausea and vomiting [as well as] improving their appetite; about half the patients who reported using marijuana for chronic pain found relief," (Joy, 1999). Another survey done by the International Cannabinoid Research Society in 1998 found, "cannabis improved spasticity, chronic pain, emotional dysfunction, weight loss [from chemotherapy], double vision, and memory loss [among multiple sclerosis patients]," (Consroe, 1997).

The PRC then seeks to redress 'reviews of earlier studies.' The 'review of earlier clinical studies' outlines the 'established effects' of Marinol and the 'relatively well-confirmed effects' of medical marijuana [cannabis]. 'Established effects' are defined as disorders that have, "been approved for Marinol to treat. Marinol (dronabinol) is approved for the medical use in refractory nausea and vomiting caused by antineoplastic

drugs in cancer…and for appetite loss in anorexia and cachexia of HIV/AIDS patients… These effects can be regarded as 'established effects' for THC and cannabis," (Grotenhermen, 2002). Grotenhermen uses the approved medical conditions of Marinol and prescribes those ailments as being the most confirmed conditions that medical cannabis has the highest efficacy. Grotenhermen then outlines the most common ailments among medical cannabis patients. Medical cannabis is said to have 'well-confirmed effects' with, "spasticity due to spinal cord injur[ies], multiple sclerosis, neurogenic pain, movement disorders, asthma, and glaucoma," (Grotenhermen).

The petition continues with 'clinical research' with medical cannabis. The 'clinical research' that was cited by the PRC comes from, "research programs [from] 6 different states, [but] only one of which had been published in peer-reviewed journals before 1995," (Vinciguerra, 1988). In their 2001 review, Musty and Russi wrote:

Data [was] available on 748 patients who smoked marijuana prior to and/or after cancer chemotherapy and 345 patients who used the oral THC capsule [Marinol]… Patients who smoked experienced 70 to 100 percent relief from nausea and vomiting, while those who used [Marinol] experienced [up to] 88 percent relief," (Musty and Rossi, 2001).

Another study of the 'clinical research' of medical cannabis is one done by Abrahamov where he used, "delta-8-THC [a less psychotropic cannabinoid compared to THC] was administered… to eight children aged 3 to 13 undergoing cancer chemotherapy… and vomiting was completely prevented in all eight children," (Abrahamov, 1995).

The broad evidence provided throughout the PRC shows how imperative reclassification is. With the current Schedule I classification, providing ample studies to determine 'an accepted medical use in the United States' is extremely difficult because it must gain the approval of both the DEA and the FDA. If the FDA and DEA do approve the study to gain empirical evidence, then the researchers must use the 'research supply' of sub-par cannabis grown from Ole Miss. The supply of cannabis grown at Ole Miss contains, "seven percent [THC], even though in Colorado the average marijuana flower is 17.1 percent THC," (Hesse, 2016). If 'clinical research' were allowed to study medical cannabis from dispensaries, then gaining empirical evidence on the efficacy of medical cannabis would be easier as well as more comprehensive in comparison to current supplies available at Ole Miss.

The second legitimating quality outlined by the PRC is the 'safety of use' of [cannabis]. This quality is then broken down into three subsections, 'acute side effects', 'the documented safety of long-term cannabis use,' and 'an argument concerning the alleged quality of cannabis being a gateway drug.' The general consensus that marijuana use, whether medical or recreational, has, "adverse effects [that] are within the range of effects tolerated for other medications," (Joy, 1999). These side effects, "relate mainly to psychological [not physiological] effects (cognitive impairment and altered perception) and an [apparent] decrease in blood pressure," (Joy, 1999). The IOM Report of 1999 did not include human subjects for its research, but a 2001 study made by Hart did. Hart's study found that, "marijuana use had no effect… on measures of cognitive flexibility, mental calculation, and reasoning. Additionally, heart rate and several subjective-effects rating ('Good Drug Effect', 'High,' 'Mellow') were increased in a [THC-Δ9]

concentration-dependent manner," (Hart, 2001). The findings by Hart conclude by deductive reasoning that cannabis has less potential for abuse than other controlled substances. For example, Schedule II, III, and IV opioids and benzodiazepines (BZO) as well as alcohol have an effect on 'cognitive impairment and altered perception' while lowering blood pressure as well as respiration and heart rate. Additionally, Schedule II cocaine and [meth] amphetamines as well as nicotine and caffeine increase heart rate in a stimulant 'concentration-dependent manner.' The findings suggest and conclude that cannabis is a psychoactive substance capable of acting as an intoxicant on users, but to a lesser extent than less regulated controlled substances like cocaine, [meth] amphetamines, opioids, and BZOs and unregulated substances like caffeine, nicotine, and alcohol. If cannabis exhibits less severe psychological effects than Schedule II, III, and IV opioids and Schedule IV BZOs along with less severe physiological symptoms than Schedule II stimulants like cocaine and [meth] amphetamine, than the PRC's claims on the safety of use of cannabis is well-founded and scheduling cannabis as a Schedule III, IV, or V controlled substance is the most sensible course of action by the DEA.

The Missoula Chronic Clinical Use Study's goal was to determine the validity of claims that, "long-term cannabis use [is] safe and [that long-term cannabis use] does not harm the stomach, liver, kidneys, and heart in contrast to many other medicinal [lower scheduled] drugs," (PRC, 2002). The Missoula Chronic Cannabis Use Study investigated these claims by examining the holistic health of the four surviving Compassionate IND program patients (Douglass, McMahon, Mussika, and Rosenfeld). The findings results are:

[Medical cannabis] demonstrates clinical effectiveness… on patients who have used a known dosage of a standardized…quality-controlled supply of low-grade [cannabis] for 11 to 27 years… in treating glaucoma, chronic musculoskeletal pain, spasm and nausea, and spasticity of multiple sclerosis. All four patients are stable with chronic conditions, and are taking many fewer standard pharmaceuticals than previously. These results would support the provision of clinical cannabis to a greater number of patients in need and believe that [cannabis] can be a safe and effective medicine with various suggested improvements in the existing [expired] Compassionate IND programs. (Russo, 2002).

Once again, extra-governmental studies on the medical efficacy of cannabis suggest some amending of current federal legislation. The findings by Russo suggest that cannabis can be used for long-term use [11 to 27 years] by patients without damaging their 'stomach, liver, kidneys, and heart' in patients having lifelong, chronic ailments. If the success of 'low-grade cannabis on lifelong, chronic ailments is irrefutable, then the use of 'high-grade' cannabis on less severe conditions would be exponentially more irrefutable in both the short- and long-term.

The final legitimating quality concerning the 'safety of use' of cannabis is the claim that such use will lead to the use of 'harder' drugs like cocaine, heroin, and [meth] amphetamines. The Institute of Medicine describes cannabis' role as a 'gateway drug' as follows:

Most drug users begin with alcohol and nicotine before cannabis- usually before they are of legal age. [Since] underage smoking [of tobacco] and alcohol usually precede

[cannabis] use, [it] is not the most common, and is rarely the first 'gateway' to illicit use. There is no conclusive evidence that the drug effects of [cannabis] are casually linked to the subsequent abuse of other illicit drugs, (Joy, 1999).

The use of cannabis is safer to use in the short- and long-term when compared to other common controlled substances and its use does not lead to the use of the other common controlled substances, then cannabis should be seen as a viable medicine and/or substance to be used by a populous much like alcohol, caffeine, and/ or nicotine. Also, the 'gateway theory' of cannabis use is only magnified with the illegality of it. For example, cannabis users would not be in the market or supply chain of 'harder drugs', if users of cannabis could access it safely and legally like other controlled [medicines] substances or like other unregulated, recreational substances like alcohol, caffeine, and nicotine.

The PRC transitions from describing the 'safety of use' of cannabis to providing ample evidence concerning the 'dependence liability' of cannabis use compared to the use of other illicit substances. The evidence on whether cannabis 'produces tolerance and withdrawal' is demonstrated first by Tanda. His research states, "[Upon] many attempts to obtain reliable self-administration behavior by laboratory animals with THC have been unsuccessful…These studies seem to indicate that [cannabis] has less potential for abuse…[than] almost all other psychoactive drugs [including] nicotine," (Tanda, 2000). The 'laboratory animals' used in Tanda's study were monkeys that were previously trained to 'self-administer cocaine by pressing a lever 10 times' and when THC replaced the cocaine solution the monkeys 'gave themselves…roughly the dose received by a person smoking a joint [cannabis cigarette].' The findings of Tanda suggest that there is

an eventual plateau cannabis will give the user making short-term cessation of use almost certain. Other medical findings suggest that, "the use of cannabis [much] like caffeine, tobacco, and amphetamines is associated with increased mesolimbic dopamine activity," (Brody and Preut, 2002). To test whether cannabis increases 'mesolimbic dopamine activity' researcher Stanley-Cary injected rats with CP 55,940, a cannabinoid agonist. The findings were, "CP 55,940 significantly reduced basal activity, increased startle onset latencies, and increased prepulse inhibition, effects opposite to amphetamines, [caffeine and nicotine]," (Stanley-Cary, 2002). The PRC then describes the dependency factors of cannabis compared to other drugs. Findings by Smith suggest that withdrawal symptoms are relatively mild by stating, "Cannabis cannot be said to provide as clear a withdrawal pattern as other drugs of abuse, such as opiates, but discontinuation of chronic THC use may cause rebound phenomena (a transient increase in intraocular pressure and loss of appetite)," (Smith, 2002). Cannabis use also has dependency rates lower than tobacco, opiate, and alcohol users. For example, "9 percent of lifetime cannabis users met DSM-R-III criteria for dependence at some point in their life, compared to 32 percent of tobacco users, 23 percent of opiate users, and 15 percent of alcohol users," (Hall, 1999).

The PRC then outlines the 'abuse potential' of cannabis and whether prior governmental reviews of cannabis' rescheduling, "distinguished between use and abuse according to the professional standards… of the medical and scientific community," (PRC, 2002). The PRC goes on to state that with all psychoactive substances including cannabis, "employ the standard three-stage conceptualization of drug-taking behavior whether licit [or] illicit. Each stage—use, abuse, and dependence—is marked by higher levels of use and increasing serious consequences," (Committee on Opportunities in Drug

Abuse Research, 1996). The findings made by the Institute of Medicine with this report affirm that individuals, whose consumption of cannabis can be described as use, rather than abuse or dependence, do not pose a significant risk of using more dangerous drugs. Additionally, "[the] findings affirm that users of medical [cannabis] are not at risk to use other illicit drugs due to their regular use of cannabis," (PRC, 2002). Regardless of the characteristics of cannabis use, the College on the Problems of Drug Dependence questions whether, "the social costs associated with the [medical] prohibition of [cannabis] are warranted by its actual harm to individuals [consuming it] and society and whether imprisonment for mere possession… is appropriate," (College on the Problem of Drug Dependency, 1997).

If the use of medical cannabis specifically does not warrant the use of other illicit substances, then rescheduling cannabis would only solidify the evidence presented by the College on the Problem of Drug Dependency. The harms warranted by medical prohibition are greater than the harms warranted under the medical appropriation of cannabis. This prohibition forces patients and recreational users into an environment of more illicit substances. If the prohibition of cannabis ceased to exist, then these patients and users alike could consume cannabis in a safer, more regulated environment with the advice of a professional with expertise in the use of cannabis to treat any 'persistent medical condition' as outlined by the Americans with Disabilities Act of 1990.

The PRC as filed by the Coalition for Rescheduling Cannabis is the most holistic approach made by individuals to change the view associated with the use of cannabis as a medicine. The claims made by the PRC assert that cannabis is a substance that does not have a 'high potential for abuse' and has an 'accepted medical use for treatment in the

United States.' The PRC used the most up-to-date information from medical cannabis patients and medical organizations in favor of the medical use of cannabis. As the DEA stalled to provide a refusal or an acceptance of the petition, "the two largest physician groups, the American College of Physicians and the American Medical Association, came out in support of [cannabis'] placement in Schedule I," (DEA: Four Decades, MAPS). The first group to support the PRC was the American College of Physicians who called for an, "evidence-based review of [cannabis'] status in February 2008; the American Medical Association reversed its long-standing position that [cannabis] should remain in Schedule I," (DEA: Four Decades, *MAPS,* 2014). The AMA took its historical stance concerning cannabis. The AMA transitioned from being the first and only institution to stand against the opinion of the Federal Bureau of Narcotics when passing the Marihuana Tax Act of 1937 to being the last and largest medical agency to endorse, "short term controlled trials indicating that smoked cannabis reduces neuropathic pain, improves appetite, and… may relieve spasticity and pain in patients with multiple sclerosis," (Head, American Medical Association, 2009). The updated statements from the American College of Physicians and the AMA came almost 7 years after the original filing of the PRC while the DEA failed to act on 'fulfilling procedural requirements' outlined by the Single Convention. The Coalition for Rescheduling Cannabis filed suit against the DEA because this delay was similar to the "paradigmatic example of unreasonable delay under Telecommunications Research and Action Center v. FCC," (DEA: Four Decades). Within weeks, the DEA notified the Coalition with a letter denying the petition and, "formalized the decision on July 8, 2011 with the Final Determination on the Petition for Rescheduling," (DEA: Four Decades). The PRC was

denied on the grounds of, "there being no adequate and well-controlled studies proving efficacy; the drug is not accepted by qualified experts, and the scientific evidence is not widely available," (Department of Justice, DEA, 2011). Following the decision of the DEA, Governors Christine Gregoire and Lincoln Chafee of Washington State and Rhode Island filed a petition similar to the PRC. The petition filed by the Offices of the Governors was filed only four months after the rejection of the PRC, and the DEA has yet to officially respond. The petitions filed by NORML, Jon Gettman alongside *High Times Magazine*, and the Coalition for Rescheduling Cannabis shows the lack of prudence by the DEA. Over the course of 44 years, the DEA only responds to petitions of rescheduling when lawsuits are filed to enforce the agency's obligation to '[fulfill the] procedural requirements' by the Single Convention on Narcotics. Every petition has been rejected on the grounds that there are no studies proving the medical efficacy of cannabis when the DEA is one of the only agencies to grant permission to do research studies on such matters. The only research facility in the United States to gain such permission to do research matters in accordance with the FDA, DEA, NIDA, and the Department of HHS is the Coy Waller Laboratory Complex at the University of Mississippi and has been that since 1968. The power the DEA has to reschedule and to grant permission of grounds on rescheduling puts respected petitioners and patients alike in a catch-22. This scenario leaves patients to use the 'disgusting and low-potency' cannabis from Ole Miss if the DEA does approve their relevant study. Additionally, this restriction to patients hinders the relevant information pertaining to the medical efficacy of cannabis to getting to the controlling agencies granted the powers to prescribe the 'accepted medical use' of cannabis in the United States. The efforts of state and federal commissions (LaGuardia,

Shafer, and Prettyman), petitions, lawsuits, and various patents show the hypocrisy with the DEA and cannabis specifically. These various efforts have provided overwhelming evidence that cannabis carries less than a 'high potential for abuse', has some 'accepted medical use for treatment in the United States' by various medical and scientific communities, and has an accepted 'safety for use under medical supervision.' In addition to depriving patients of an opportunity to lawfully use cannabis as a medicine, the relevant federal bureaucracies deprive citizens their fundamental, constitutional rights.

In this chapter, I have critically analyzed various historical references that greatly invalidates the Schedule I classification of *Cannabis sativa* as a controlled substance through state and federal commissions, patents filed, petitions and federal lawsuits being ignored, and the inclusion in 29 states and the District of Columbia having legislation permitting the 'broad use' of *Cannabis sativa* for medical purposes as well as the inclusion of 14 states permitting the 'limited use' of a non-psychoactive form of *Cannabis sativa* for treatment resistant epilepsy.

Chapter III

The Constitutional Provisions for Use of *Cannabis sativa*

In this chapter, I will investigate how the lack of settling of the dispute with regards to the Schedule I classification of cannabis has created an environment that violates the Fourth, Fifth, Eighth, Ninth, Tenth, and Fourteenth amendments of the United States Constitution. In this chapter, I will analyze relevant, historic legal precedent from the Supreme Court on common defenses used to perpetuate the "War on Drugs", and how such legal precedent legitimizes the movement of cannabis law reform.

The first piece of federal legislation that was formed to prohibit and penalize the production of cannabis is The Marihuana Tax Stamp Act of 1937. The Act of 1937 states that marihuana, "means all parts of the plant Cannabis sativa L., whether growing or not; the seeds thereof; the resin extracted from any part of such plant; and every compound, manufacture, salt, derivative, mixture, or preparation of such plant, its seeds, or resin," (Marihuana Act of 1937). This definition of marihuana and all of the Act of 1937 were deemed unconstitutional with the court decision of Leary v. United States in 1969. The court found that the Act of 1937 infringed on 5th Amendment privilege of not incrimination oneself via the double jeopardy clause. With the Act of 1937 being removed from the United States federal code entirely, the federal government formed the Controlled Substance Act to take its place on regulating the production, cultivation, and

manufacturing of cannabis. The CSA of 1970 included the same verbiage that remained consistent to the unconstitutional definition, as defined by Leary v. United States, of marihuana outlined in the Act of 1937.While the intent of the CSA and the Act of 1937 operate differently, both remain to infringe on rights of the same sort. If one, the Act of 1937, can be found stripping providers of constitutional rights, then the CSA could also be charged with the same unconstitutionality. In the first petition to reclassify cannabis, NORML suggested that the grounds for reclassification be done to be in compliance with the Single Convention on Narcotic Drugs placement of cannabis. The Single Convention does stray away in verbiage when defining the plant. The Single Convention defines marihuana as, "cannabis means the flowering or fruiting tops of the cannabis plant… from which the resin has not been extracted," (Single Convention, 1961). The Single Convention also distinguishes between, "the fruiting or flowering tops and the seeds and leaves when not accompanied by the tops," (Single Convention, 1961). The fruiting tops of the cannabis plant is placed in Schedule I while the seeds or leaves not accompanied by the fruiting tops are in Schedule IV. The differentiation between the Schedule I and IV classifications of cannabis imply that the Single Convention was well aware of the uses of cannabis. The Schedule IV version of cannabis allows for the seeds and leaves to be used in an industrial way much like hemp was used in the United States before the passing of the Act of 1937, where the Schedule I definition of cannabis was more in line with the medical/ non-medical use of cannabis through smoking or through the use of tinctures or extracts. These uses of cannabis are seen explicitly when the Single Convention states, "This convention shall not apply to the cultivation of the cannabis plant exclusively for industrial or horticultural purposes, and a party may reserve the right

to permit temporarily in any one of its territories: the use of cannabis, cannabis resin, extracts and tinctures of cannabis for non-medical purposes," (Single Convention, 1961). The goal of the Single Convention with regards to cannabis is one that ensures that individual parties be able to be utilize cannabis for industrial purposes as well as the regulation of 'temporary use of non-medical cannabis.' The Single Convention also provided that if two parties were in dispute of the application of any part of the convention, "the said Parties shall consult together with a view to the settlement of the dispute by negotiation, investigation, mediation, conciliation, arbitration, recourse to regional bodies, judicial process or other peaceful means of their own choice," (Single Convention, 1961). The two parties that were in 'consult together' were the DEA and NORML with the first rescheduling petition, the DEA and *High Times Magazine* with the second, and the DEA and the Coalition for Rescheduling Cannabis, but the DEA refused to consult with the petitioners in every instance and additional lawsuits were filed which forced the DEA to 'fulfill procedural requirements' to reschedule a substance in accordance with the CSA.

The first of many constitutional amendments that have been modified in recent decades includes the changing interpretation of the Fourth Amendment with specific regards to the 'search and seizure clause.' The first Supreme Court case that is relevant to the old form of Prohibition is Taylor v. United States. The case by the Supreme Court upheld a court doctrine that is wildly imperative to the current prohibition of cannabis. The case held, "the smell of whisky alone was not sufficient to allow police officers to search the garage of a house without a warrant," (Taylor v. United States, 1932). This Supreme Court of the United States' decision made precedent of the Plain Smell

Doctrine. This doctrine refers to a situation in which an officer makes a determination of reasonable and probable grounds for a search based solely on the detection of some distinctive odor. This doctrine is still widely contested throughout the United States where law enforcement officers in 28 states now have to 'allow' the odor of fresh cannabis to not be grounds for a reasonable search. Officers must allow this odor to permeate because motorists could be using cannabis as a medicine and not as an illicit substance. Such 'odor' is no longer considered preponderance to a criminal activity.

Since the repeal of Prohibition of alcohol, the Fourth Amendment has been modified with cases like Mapp v. Ohio, Terry v. Ohio, Kentucky v. King, and Rodriguez v. United States. These cases' interpretations of the Fourth Amendment's 'search and seizure clause' bring much clarification to the rights of cannabis users in the modern legal scene. The first of these cases, Mapp v. Ohio, was monumental in criminal procedure, in which the Supreme Court of the United States decided that evidence obtained in violation of the Fourth Amendment may not be used in state law criminal prosecutions in state courts as well as in federal criminal law prosecutions in federal courts. The Supreme Court accomplished the change criminal procedure by use of a principle known as selective incorporation or the exclusionary rule. Such principles allow the defendant in criminal cases to suppress evidence from being entered into discovery in relevant cases. The decision of Mapp v. Ohio in 1961 protects lawful users of cannabis from more stringent federal laws if law agencies chose to try defendants in a higher court where medical cannabis is in violation with the Schedule I classification of cannabis and its derivatives. This is only made possible if law officers usurp the 'probable cause part of the search and seizure clause' of the fourth amendment or obtaining a lawful warrant

obtained such evidence of cannabis. The 'probable cause' portion of the Fourth Amendment was redefined with the Supreme Court case of Terry v. Ohio in 1968.

Before the ruling on Terry v. Ohio, states needed probable cause to administer a reasonable search, "the Warren Court lowered the standard [of reasonableness] police officers had to meet to conduct a certain type of search: the so-called 'stop and frisk,'" (Starkey, Villanova University School of Law, 2012). A 'stop and frisk' search is precluded by an officer believing a suspect is armed with a weapon and in the 'commission' of a crime. The investigating officer can conduct an interrogation and pat down for weapons. Veteran Cleveland Police Department Detective Martin McFadden witnessed two men, Terry and Chilton, circling a store in a 'stick up' fashion. McFadden, a 39-year police veteran, testified, "[Terry] did not look right to [me] at the time," (Terry v. Ohio, 1968). After questioning the alleged suspects, McFadden patted down Terry and Chilton because he presumed the sketchiness of the demeanor of the two as them having the intent on robbing the store, and found both concealing weapons. The decision of such case, "Police are only permitted to frisk for weapons, not evidence of a crime. Thus, frisks are limited to a pat down of outer clothing," (Starkey, 2012). The Supreme Court found that the patting down of Terry and Chilton fit perfectly within these bounds. The Warren Court fundamentally altered Fourth Amendment law without admitting its new paradigmatic shift of the scope of the fourth amendment rights. A criminal search and seizure, for the first time, was constitutional when law enforcement lacked probable cause, but had 'reasonable suspicion' of a suspect having the intent of committing a crime with a weapon. Reasonableness became king, while decaying the rights of citizens of the United States. Such ruling, if properly upheld, would lessen the effects of the 600

thousand plus 'Terry frisks' in New York City every year. If an officer conducts a 'Terry frisk' and the suspect is in possession of cannabis, then such suspect's cannabis becomes in 'public view.' The impact of 'Terry frisks' is seen when in the state of New York in the highest of magnitude. New York has decriminalized the possession of cannabis of less than 25 grams. The punishment of such offense is a citation carrying a fine of less than $250 for the first three offenses. However, if the cannabis is discovered by a 'Terry frisk', then the cannabis becomes a, "Class B misdemeanor punishable by a fine of $250 [alongside] a maximum sentence of 90 days," (*New York Laws*, NORML, 2016). Terry frisks by the virtue of cannabis users are arguably more detrimental to the future of such suspects arrested for a small discrepancy in the law in the state of New York.

Since the people of the State of California passed Proposition 215/ Compassionate Use Act of 1996 which legalized cannabis for medical use, many cases have since been heard by the Supreme Court of the United States to try certain aspects of the ongoing war on drugs. For example, in 2011 the court case Kentucky v. King went to the Supreme Court. This case is of extreme importance to the usurpation of the Fourth Amendment right of, "the people to be secure…against unreasonable searches and seizures, shall not be violated, and no warrants shall issue, but upon probable cause," (US Constitution). This case originally involved a person, other than defendant King, who allegedly sold crack cocaine to an undercover officer in Lexington, Kentucky. After the deal was made between the crack cocaine dealer and the undercover officer, the dealer moved quickly to an apartment building. Uniformed officers followed with no avail, heard a door shut and, "detected a very strong odor of burnt marijuana," (Kentucky v. King, 2011). Officer Steven Cobb banged on the apartment door notifying those inside that he was on officer

of the law, and he, "could hear people inside moving as [though] things were being moved inside the apartment, of which Cobb testified led the officers to believe that drug-related evidence was about to be destroyed," (Kentucky v. King, 2011). The fact that such 'drug-related evidence' was allegedly destroyed is an exigent circumstance to enter the residence without a warrant. Exigent circumstances occur when a law enforcement officer has reasonable suspicion of a crime being committed with no sufficient time to secure a warrant, and the Kentucky Court of Appeals affirmed and held that exigent circumstances, "justified the warrantless entry because the police reasonably believed that evidence would be destroyed and did not impermissibly evade the warrant requirement," (Kentucky v. King, 2011). While the Kentucky Court of Appeals affirmed that exigent circumstances are enough of a cause to conduct a search without a warrant, the Supreme Court of Kentucky reversed such affirmation. So the case was taken to the Supreme Court of the United States who ultimately decided, "That an exigency existed but officers did not violate or threaten the Fourth Amendment prior to the exigency, we hold that the exigency justified the warrantless search of the apartment. The decision of the Kentucky Supreme Court is reversed, and the case is remanded for further proceedings not inconsistent with this opinion," (Kentucky v. King, 2011). The implications of Kentucky v. King include an environment where officers may ascertain noise as the proof of suspects destroying evidence. If an officer has such suspicion of evidence being destroyed, then this presumption assumes the suspect is guilty, destroying another ideal that is at the heart of American rule of law, presumption of innocence. The exigency in this case could be the odor of burnt marijuana, which in the court of law is not indisputable evidence. While the smell of burnt marijuana is unique and noticeable,

the smell like the location of the crack cocaine dealer could not be identified by a factor beyond reasonable doubt. While the possession of cannabis in the state of Kentucky is illegal, it warrants a less serious charge than that of crack cocaine. The exigent circumstance that existed for the uniformed officers following the dealer was not the 'smell of burnt marijuana' but the transfer of crack cocaine from the dealer to the undercover officer.

The next case that is relevant to cannabis users concerning their Fourth Amendment right is the case of Rodriguez v. United States. This case analyzed whether police officers may extend the length of a traffic stop to conduct a search with a trained detection dog. The case involves Dennys Rodriguez being pulled over for swerving off the shoulder of the road. After being questioned, the officer reported, "an overwhelming scent of air-fresheners emanating from the car," (Rodriguez v. United States, 2015). The overwhelming scent of air-fresheners acted as an exigent circumstance giving the officer reasonable suspicion that Rodriguez was involved in other criminal activity. The officer requested back up and conducted a records check on the vehicle and its passengers. The officer issued Rodriguez a warning ticket for swerving. After such issuance, a drug detection dog indicated the presence of drugs within the vehicle. The officer searched the car and discovered methamphetamine. Rodriguez filed a motion to suppress the evidence by arguing that an officer may not extend a completed traffic stop to conduct a K-9 sniff without reasonable suspicion. The Supreme Court ruled that, "the use of a K-9 unit after the conclusion of a traffic stop and without a reasonable suspicion of criminal activity [similar to Terry v. Ohio] is a violation of the Fourth Amendment prohibition of unreasonable search and seizures," (Rodriguez v. United States, 2015).

Currently, evidence that is in 'plain sight' is suspect for a warrantless search and seizure and the Supreme Court of the United States has upheld that to satisfy the probable cause clause of the Fourth Amendment, but the court decision of Rodriguez v. United States eliminates any contention that would include that the plain smell of fresh or burnt cannabis to satisfy either the 'reasonable suspicion' as outlined by Terry v. Ohio case where stop and frisk searches are allowed when officers are have suspicion of a suspect being armed or as 'probable cause' because the 2015 case decided that the use of a K-9 unit after the completion of a traffic stop is a violation of fourth amendment rights. If the use of a trained animal with sensory perception far exceeding that of his/her handler is a violation of the prohibition of unreasonable search and seizures, then such 'plain smell' cannot serve as an exigent circumstance to conduct a warrantless search as explained in Kentucky v. King. The smell of fresh or burnt cannabis should not be held as a qualifier for officers to conduct searches where cannabis can be used as legal medicine, for recreational purposes, or where simple possession is decriminalized because states reserve the right to amend laws or their own constitution by ballot initiatives or popular referendums. Such officers using the current Schedule I classification to distinguish the discrepancy between possible state laws and federal laws concerning possession and use of cannabis are violating the oath of upholding the constitution. While the Supreme Court of the United States has not officially declared if plain smell can satisfy as either a 'reasonable suspicion' to conduct a stop and frisk search or as 'probable cause' to conduct a lawful, though warrantless search. States like Arizona and Massachusetts have found that the smell of cannabis made by a law enforcement agent, where canine or

human, is not enough grounds for either from state court decisions State v. Sisco and Commonwealth v. Cruz for the states respectively.

While the modifying interpretation of the Fourth Amendment has occurred through several Supreme Court decisions, the Fifth Amendment rights have been seized through two main components: substantial assistance and asset forfeiture. Substantial assistance is assistance directed to the investigation and prosecution of criminal activities by persons other than the defendant. Defendants that want to lower the sentence of their convictions carry out such assistance. The practice of substantial assistance started after the implementation of the Sentence Reform Act of 1984. The intent of the Sentence Reform Act of 1984 includes: providing sentences that are close approximations of the actual time defendants would serve in prison, provide consistency between similar defendants convicted of similar offenses, and fostering sentence lengths that correlate with the severity of the offense committed. Substantial Assistance came to rise with the passing of the 1986 Anti-Drug Abuse Act. The Act of 1986 made provisions to reintroduce mandatory minimums for drug offenders that were repealed in 1970, even though, "no hearings were held with no experts on the relevant issues, no judges, no one from the Bureau of Prisons, or from any other office in the government, provided advice on the idea before it was rushed through the committee and into law," (Sterling, *Public Broadcasting Service,* 2014). The Act outlined 10 and 5 year sentences, the longer of which was issued to offenders who were seen as 'major traffickers', while those receiving the shorter sentences were defined as 'serious traffickers' were more than likely just consumers of the illicit substances. The only way defendants could receive a shorter sentence than the ones prescribed by the Act would be if he/she provided information

leading to the prosecution of another, substantial assistance. The prosecutor in the case would be the agent determining if the information provided qualified as substantial assistance, not the impartial arbiter. Before the decision of United States V. Wade, "neither defendants nor the district could inquire into the prosecutor's reasons for refusing to move for departure [of sentencing guidelines outlined by the Sentencing Reform Act of 1984]," (Austin, Campbell Law Review, 1993). The partiality of the prosecutor is a direct violation of the procedural due process clause of the Fifth Amendment. The procedural due process clause's purpose is to protect individuals from the coercive powers of the government by ensuring that adjudication processes under valid laws like the Sentencing Reform Act of 1984 and the 1986 Anti-Drug Abuse Act are fair and impartial such as the right to an impartial arbiter. The 1986 Act, "shifts power away from judges- who are impartial- to prosecutors, who are not," (Sterling, 2014). The case of Mistretta v. United States, petitioner John Mistretta argues that the United States Sentencing Commission created by Congress through the Sentencing Reform Act of 1984 was in violation of the separation of powers. This argument is made because the powers of the Commission were given to the judicial branch, not carried out by the legislative branch. The Supreme Court held that the delegation of the power to create sentencing guidelines did not violate the separation of powers clause. While the Supreme Court disagreed with the claims of Mistretta, a key criticism, however, is one that the, "guidelines take too much discretion away from the judge wile placing much more discretion in the hands of the prosecutor, tipping so one-sidely in the prosecutor's favor as to 'disturb the due process balance essential to the fairness of criminal litigation,'" (Austin, 1993). The portion of the Sentencing Reform Act of 1984 establishing the U.S.

Sentencing Commission did not violate separation of powers, because although Congress cannot generally delegate its legislative power to another Branch, the non-delegation doctrine does not prevent Congress from obtaining assistance from coordinate Branches.

Another portion of the Fifth Amendment that the War on Drugs violates is the double jeopardy clause. In 1937, the Marihuana Tax Stamp Act was passed. Before the passage of the Act of 1937, there was no federal piece of legislation to interpret the production, distribution, or consumption of cannabis leaving states to deal with the use of cannabis through individual legislation making the sale or use of the substance illegal. The Marihuana Tax Stamp Act of 1937 implemented a system of drug taxes on cannabis use. A drug tax allows governments to collect revenue from the 'taxpayer,' in a civil action, an amount in which calculates as a fraction of the street value of the substance in possession by the 'taxpayer' or a flat fee permit of the substance. Federal inspections of suspected drug dealers were continued by the Federal Bureau of Narcotics and its progeny until 1969 when Timothy Leary challenged the Act of 1937, claiming it violated the double jeopardy clause of the Fifth Amendment which states, "no person shall…be subject for the same offense to be twice put in jeopardy of life or limb, nor shall be compelled in any criminal case to be a witness against himself." The Fifth Amendment ensures that nobody can be tried for the same crime twice, nor be forced to testify against oneself. In 1969, the U.S. Supreme Court heard the case, Timothy Francis Leary v. United States, the first federal challenge to the Marihuana Tax Stamp Act of 1937. After being denied entrance to Mexico by car, Timothy Leary was stopped at the border, searched, and found in possession of marijuana. While in the act of crossing the border, Leary was a 'transferee of marijuana'. As a transferee, the Act of 1937 would have made

Leary should have registered with the appropriate authorities and paid his transfer tax to the Internal Revenue Service. Leary had not done either, thereby placing him in violation of the Act. After conviction in a lower court, Leary held in the Supreme Court that compliance violated his privilege against self-incrimination. The Supreme Court held that the Act of 1937 placed Leary in a precarious legal limbo. The Act of 1937 allowed a particular group of people, medical suppliers of cannabis, legal access to dealing cannabis at a lower tax rate, and not subject to many state anti-cannabis laws. The Act of 1937 inadvertently created a group of unsanctioned, untaxed dealers who had to release identifying information to federal authorities when they chose to pay the tax. The federal authorities could then pass it to local police who made such consumption and sale illegal. The group of "unsanctioned dealers," whose activities fell outside of the medical field, had released information that compromised state law. Most state laws at the time made cannabis illegal, except for specified conditions, most of which were outlined in the Act of 1937. Thus, supplying one's name and address to federal authorities exposed the defendant to a "real and appreciable" risk of self-incrimination. The Supreme Court declared the Act unconstitutional. Such discrepancies between the sanctioned, medical suppliers and 'unsanctioned' suppliers forced Congress to pass the Controlled Substances Act of 1970, which regulated drugs in all states. This Act explicitly named and scheduled all illegal drugs and provided for a system of penalties and enforcement that still stands today.

Finally, some aspects of asset/civil forfeiture remain of great importance when considering the violations of the Fifth Amendment's 'just compensation' clause. Asset forfeiture is a form of confiscation of assets by the State and typically applies to the

alleged proceeds or instruments of crime. Asset forfeiture is applied to a host of different types of crimes but is typically associated to terrorist activities, drug related crimes, and other criminal and civil offenses. Asset forfeiture developed from English common law where statutory forfeitures of, "offending objects used in violation of the customs and revenue laws," (Calero-Toledo v. Pearson Yacht Leasing Company, 1974). The court case Calero-Toledo v. Pearson Yacht Leasing Company invoked the 'guilty property' fiction, which justifies the forfeiture of an innocent owner's property against the ship. To justify the 'guilty property' fiction, the Supreme Court declared, "the thing is here primarily considered as the offender, or rather the offense is attached primarily to the thing," (Calero-Toledo, 1974). The 'guilty property' fiction prescribed the property is guilty of the crime, regardless of the intent of the owner, and for that point the property is justifiably forfeited to law enforcement agencies. In Dobbins' Distillery V. United States, the Court, "upheld the forfeiture of the real and personal property of a distillery occupied and operated by a lessee who failed to maintain the distillery's business records in accordance with United States revenue laws. The Court maintained that the forfeiture action attached to the distillery and did not require proof of the lessor-owner's knowledge that the lessee committed fraud upon the government," (Brodey, *Journal of Criminal Law and Criminology,* 1997). The 'guilty property' fiction rests on the notion that the owner who allows his property to become involved in an offense has been negligent," (Brodey, 1997), and such forfeitures still justified because of such negligence of the owner to the lessee of the property. While most cases dealing with asset forfeiture pertain to concerns of the Fifth Amendment, the court case Austin v. United States upholds that some types of asset forfeiture can apply to the Eighth Amendment's 'excessive fines' clause. The

claim made by Austin was one that explained that the Eighth Amendment, unlike other constitutional provisions, did not limit its protection to the context of criminal proceedings. Additionally, the Court noted, "that the historical purpose of the provision was to 'prevent the government from abusing its power,'" (Brodey, 1997). The Court decided that the 'excessive fines' clause did also pertain to civil proceedings, and since Austin had plead guilty to the crime of possession with intent to distribute cocaine, the forfeiture of his mobile home and his auto body shop were not contraband. Furthermore, the Court stated:

The dramatic variations in the value of conveyances and real property forfeitable under [21 USC] § 881 (a) (4) and (a) (7) undercut any argument that the forfeitures serve to compensate the government for the cost of law enforcement. Thus, the Court concluded that the forfeiture in Austin was subject to the limitation of the 'excessive fines' clause of the Eighth Amendment, (Brodey, 1997).

While the Court decided unanimously in favor of Austin, the Court declined to declare a test for determining when a civil forfeiture is constitutionally excessive. Rather, the Court remanded the case to the trial court for such determination. State Supreme Court decisions with specific regards to the rulings of State v. Sisco and Commonwealth v. Cruz, rule that law enforcement agencies cannot use any iota of burnt or fresh cannabis as grounds for reasonable suspicion to conduct a warrantless search. However, no state court decisions have ruled on whether state law agencies can apply asset forfeiture to legal, medical cannabis businesses. State legislators must make laws to restrict law enforcement agencies from using federal civil forfeiture laws. These laws must equate to the intent of the cases of State v. Sisco and Commonwealth v. Cruz. Such court ruling

argues that the smell of cannabis does not constitute as reasonable suspicion of a crime being committed. Likewise, these rulings must align so law enforcement agents cannot use the Schedule I classification of cannabis from the Controlled Substances Act to seize assets from cannabis users and distributors even though these agents are not in violation of state laws.

While civil forfeiture has been argued to be in violation of the 'excessive fines and punishment' clause of the Eighth Amendment, other provisions of the War on Drugs remain more dubious to the 'cruel and unusual punishment clause' of the Eighth Amendment. Such provisions like felony disenfranchisement for 'victimless crimes' such as medical use of cannabis in states that have prescribed such use as legal. In *More Primitive Than Torture*, Dietrich analyzes many facets of felon disenfranchisement like: the history of it in Europe and how its typified use translated to the United States after the Revolutionary War, several constitutional and statutory challenges of felon disenfranchisement, the transformation of the evolution and application of the Eighth Amendment, and, finally, whether felons disenfranchised while not under state supervision violates the 'cruel and unusual punishment' clause of the Eighth Amendment. He first notes, "James emerging from an Alabama penitentiary after three years of incarceration on felony drug charges. While his past is unfavorable, he expects now that he has served his time he will be able to enjoy all the rights and privileges [specifically the rights and privileges of life, liberty, and property] of being a free man [not under state supervision through parole or probation]," (Dietrich, *University of Maryland, Baltimore County*, 2007). Dietrich notes the origins of felon disenfranchisement are consistent with Greco-Roman culture by stating, "those who committed a crime would be labeled as

'infamous' and would be subject to a range of disabilities, including prohibitions on voting, making speeches, appearing in court, serving in the army, or appearing in the Greek [or Roman] assembly," (Dietrich, 2007). These traditions continued with the Germanic tribes conquering the existing Roman Empire. The concept of 'infamous' crimes deserving of a 'range of disabilities' including the prohibition of voting rights became the, "concept of 'outlawry' being employed as a method of punishing those who committed serious crimes against the community," (Dietrich, 2007). With the rise of colonial powers like England, individuals convicted of a felony or treason under the power of the crown could, "be declared 'attained' resulting in several dire consequences like: losing most civil and proprietary rights, forfeiting real and personal property to the crown, and prohibiting themselves from the transference of proper to family by grant or devise also known as 'corruption of the blood,'" (Dietrich, 2007). Such ideals were typified in early colonial law rewarding 'prescribed good moral behavior' while, "disenfranchising those involved in perceived moral shortcomings," (Dietrich, 2007). These religious ideals on disenfranchisement remained static until the Civil War and the inclusion of the Thirteenth, Fourteenth, and Fifteenth Amendments that placed, "a substantial limit on the states' power, especially in the realm of race and voting," (Dietrich, 2007). Several Southern states, in order to be readmitted in the Union while still denying black populations the franchise. The tool in which Southern states accomplish this goal is to, "include disenfranchisement of those convicted of crimes commonly thought to be committed more frequently by blanks, while appearing race-neutral," (Dietrich, 2007). The assumption being made was that blacks were more prone to disenfranchisement because of their previous condition of servitude and possessed

'peculiar characteristics' that caused them to, "commit certain 'black crimes' such as theft, arson, perjury, wife-beating, and vagrancy, yet not disenfranchising individuals convicted of 'white' crimes such as crimes of violence, including sometimes murder," (Dietrich, 2007). Under the tenure of Chief Justice Earl Warren, the Supreme Court decided that voting is a fundamental right, and could only be abridged if a law or constitutional provision survived strict scrutiny review. In the case of Carrington v. Rash, the majority opinion ruled that a jurisdiction could not simply, "'fence out' a certain segment of the voting population based on perceptions as to how that population would vote," (Carrington v. Rash, 1965). While the Supreme Court ruled that legislators could not block a 'certain segment of the voting population', strict scrutiny review did not apply to felon disenfranchisement. The case of Carrington v. Nash implied certain jurisdictions could infringe on certain segments; several states began to reexamine the intent behind its disenfranchisement provisions. However, "in 1973, the picture of felon disenfranchisement in America was grim. While four states did not deprive criminals of the right to vote… nearly half of the states disenfranchised convicted criminals for the rest of their lives," (Dietrich, 2007). The analysis of the intent behind States' intent behind its disenfranchisement provisions lines up with the changing views of mandatory minimums. The shift in felon disenfranchisement is examined by a survey conducted by the Department of Political Science at Rutgers University, "the researchers found that 81.7 percent of respondents 'rejected the policy of permanent disenfranchisement for convicted felons," (Pinaire, 2003). Even though public sentiment in the United States disagrees with 'permanent disenfranchisement for convicted felons', "an estimated 3.9 million of the 4.25 million individuals denied the right to vote because of criminal history

are in the United States, and of the 3.9 million currently without the right to vote because of current incarceration or have been disenfranchised for life are 1.4 million black men, representing 13 percent of black men nationwide," (Felony Disenfranchisement Laws, 2003). In 1980, the total prison population of federal and state facilities was 218 thousand and of that 18.76 percent were drug offenders. In 2014, 488 thousand of the total 1.51 million offenders incarcerated were drug offenders, (Carroll, PolitiFact, 2016). Of the increase in total federal and state prison, drug offenders make up 32.3 percent of such total increases. It can be extrapolated that 32.3 percent, 1.26 million, of the 3.9 million disenfranchised are drug offenders. Public sentiment on drug abuse is shifting from a moral problem to a health problem as noted by Bernie Sanders stated in the Presidential debate in Flint Michigan in 2016. If early colonial law disenfranchised on the basis on 'perceived moral shortcomings', and, "a majority of Americans (2/3) think that the criminal possession of [cannabis] and harder drugs like cocaine and heroin shouldn't be prosecuted," (Nadelmann, *Drug Policy Alliance,* 2014), as well as the issue of drug abuse being seen as a health issue, not a moral issue, then current disenfranchisement laws should apply to the strict scrutiny review as insufficiently outlined by the 1965 case of Carrington v. Rash.

While felony disenfranchisement and civil asset forfeiture serves as a violation of the 'cruel and unusual punishment' and the 'excessive fines' clauses respectively, the most blatant attack on the state appropriation of legal cannabis is the Tenth Amendment. Such amendment provides, "powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people." This effectively means that if the Constitution does not specifically grant

the power to the federal government over a specific issue, and if the State does not prohibit such issues, then the State or the collective persons of the State decide on such issue not outlined by the Constitution. Since the Constitution does not either prohibit the use of cannabis explicitly or does the standard definition of cannabis as outlined by the Marihuana Tax Stamp Act of 1937 apply to States anymore because of its 'real and appreciable' risk of self-incrimination as decided by Leary v. United States, States have the enumerated rights to decide if cannabis use can be regulated within its borders. If each state allowing for legal cannabis fails to keep the supply of such cannabis in its borders than Congress can regulate such commerce through the enumerated powers of the 'commerce clause.' The court cases of Raich v. Ashcroft and Nebraska and Oklahoma v. Colorado are the most current and of most importance concerning States' rights in the 21st century cannabis scene. At the time of the case, 11 states had currently allowed the medical appropriation of cannabis with California being the largest state allowing its use for such purposes. California allowed the medical use of cannabis through Proposition 215 while the federal government not recognizing medical cannabis because of the Schedule I classification through the CSA of 1970 implying that such a substance has 'no current accepted medical use in the United States.' The federal government felt strongly enough to divert resources, "that could have been used to fight terrorism or go after violent traffickers, in order to arrest sick people," (Guither, *Drug War Rant*, 2016). The urge to divert such resources is motivated by the police-for-profit that civil asset forfeiture incentivizes. The case involves two medical cannabis patients, Raich of Oakland and Monson of Oroville, along with two anonymous caregivers with the support and backing of the Oakland Cannabis Buyers Cooperative suing the federal government

on October 9, 2002, "to prevent the feds from interfering with their [State] right to use medical cannabis," (Guither, 2016). The cooperative argued three points to defend such access to medical cannabis. Firstly, the action of the respondents was completely legal under state and local laws through Proposition 215 on the state level and the Oakland Cannabis Buyers' Cooperative on the local level. Additionally, it is exclaimed that the use of cannabis by the respondents is of medical necessity and, "the evil sought to be averted was less heinous than that performed to avoid it," (United States v. Aguilar, 883 F.2d 662, 693 (9th Cir. 1989). The second factor upheld the decision held by Judge Washington, who ruled in favor of Robert Randall and opened up the Compassionate IND Program to allow patients with 'marijuana-responsive disorders' access to such medicine. Finally, the cannabis, "grown as part of a cooperative of patients and no money changing hands," (Guither, 2016), is exempt from the interstate commerce clause. As a result of such aspects of the case, the Ninth Circuit Court of Appeals granted a preliminary injunction to stop the federal government in part on this ruling:

We find that the appellants have demonstrated a strong likelihood of success on their claim that, as applied to them, the CSA is an unconstitutional exercise of Congress' Commerce Clause authority, (Raich v. Ashcroft, 2005).

The Commerce Clause and its intent is best described by, the father of the Constitution, James Madison when he states:

The powers delegated by the proposed constitution to the federal government are few and defined. Those which are to remain in the State governments are numerous and infinite…The powers reserved to the several States will extend to all the objects which,

in the ordinary course of affairs, concern the lives, liberties, and properties of the people, and the internal order, improvement, and prosperity of the State, (Madison, *The Federalist*, 1888).

The 'preliminary injunction' granted by the Ninth Circuit Court of Appeals on the behalf of the respondents alleged that the CSA of 1970 is an unconstitutional exercise of the Commerce Clause on the basis of the court case of United States v. Lopez. The case of United States v. Lopez and further clarified by United States v. Morrison ruled, "Congress only had the power to regulate the channels of commerce, the instrumentalities of commerce, and the action that substantially affects interstate commerce, but not the power to regulate relatively unrelated things," (United States v. Morrison, 2000). Ultimately, the Supreme Court argued that, "federal control of the intrastate incidents of the traffic in controlled substances is essential to the effective control of the interstate incidents of such traffic," (Raich v. Ashcroft). In Raich v. Ashcroft, the federal government ensures that the Commerce Clause is relevant, "as long as the activity is related in some way to other activities that are part of interstate commerce, then Congress has the power to determine the bounds of any [intrastate] subclasses at its own whim," (Trudeau, *Cannabis Culture,* 2005).

The merit of the 'federal control of intrastate incidents' being essential to the control to the control of the 'interstate incidents of such traffic' is examined in the court case of Nebraska and Oklahoma v. Colorado. The court case examines how the legality of medical and recreational cannabis in Colorado, "caused [cannabis] to flow into their states, thereby undermining [Nebraska's and Oklahoma's] strict laws prohibiting [cannabis]. The states' claim 'irreparable injury' by draining their treasuries, placing

stress on criminal justice systems, and endangering the health of their residents," (Watson, *Huffington Post*, 2016). An irony of this case that caused the Supreme Court of the United States to move for a motion to leave to file a bill of complaint denied on March 21, 2016 is the fact Oklahoma along with 15 other states recently enacted medical cannabis bills for the use of CBD oil for epileptic seizures in children, and such bills hardly ever provide how possible patients safe, in-state access. If in-state access is not secured for the state of Oklahoma, then patients who could legally use CBD for epilepsy would indeed have to travel to states like Colorado that could provide just that. Additionally, the assertion that Colorado having a legal, regulated marketplace, "naturally resulted in more people entering these states with cannabis, while not alleging that the flow of cannabis into the states was due to Colorado's engaging in conduct that would promote interstate commerce," (Watson, 2016), grounds that would allow Congress to intervene via the Commerce Clause. The Supreme Court would not have denied the motion if the legality of cannabis in Colorado was related in some way to illegal activities in Nebraska and Oklahoma, which would then be part of interstate commerce. Since this argument is invalid, Congress does not have the power to determine the bounds of any [intrastate] subclasses on its own whim, and the Ninth Circuit Court of Appeals preliminary injunction would have 'demonstrated that the CSA of 1970 is an unconstitutional exercise of Congress' Commerce Clause authority.

The 'motion to leave to file a bill of complaint' being denied to the states of Nebraska and Oklahoma, the Ninth District Court of Appeals' 'preliminary injunction' for respondent Raich, and the Obama's continually lessened priority of enforcing federal cannabis laws in states where medical cannabis is legal proves how federal agents and

departments are protecting the privileges and immunities of some citizens in some states while not providing blanket coverage legislation to protect all citizens in all states is in violation of the 'Privileges and Immunities' clause which states, "No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States," (US Constitution, 1789). This clause is located in both the Preamble; Article IV, Section 2, Clause 1; and the Fourteenth Amendment. Since this clause is located in the Preamble, its gravity then becomes attached to the federal government as well as state governments. Since the people of various states enjoy the 'privilege' to grow medical cannabis while having the 'immunity' from the law to use such cannabis, this privilege and immunity by and for the law for medical cannabis users in some states must not be 'abridged' in states that 'make and enforce such laws [that undoubtedly curtail various] privileges and immunities' of other potentially-legal medical cannabis users in all other states.

The ongoing war on cannabis violates all 'four relations' as defined in *The Social Contract* written by Rousseau. The prohibition of cannabis ignores, "laws that govern the Sovereign to the State," (Rousseau), wherein Congress has made legislation to criminalize a substance while enforcing such criminalization with tooth and nail even though as argued earlier the Constitution gives it no footing. Secondly, civil asset forfeiture oversteps the 'second relation' of the social contract by treating governmental agencies as private citizens. Such cases between agencies and citizens are treated as a tort, not a criminal proceeding. The agencies accuse citizens of crimes by 'preponderance of evidence' while hindering innocent people from obtaining such assets that without contest are theirs as well as profiting off of seized assets. Finally, morals and manners,

customs, and public opinion should dictate and motivate the laws of a society, and sentiment on cannabis, drug abuse, and other drug crimes is being ignored. Ignoring such public sentiments has caused the discrepancy between states with medical cannabis legislated through ballot initiatives and the federal Schedule I classification of cannabis. For these reasons identified above, it is sensible to then assume that failure to observe these four relations will cause for, "the best possible form to public affairs," (Rousseau), to not occur. Such disregards of these relations should be considered to have greater accord and harmony between governing agents, legislators, courts, law enforcement agents and their constituents.

In this chapter, I have analyzed how the lack of settling of the dispute with regards to the Schedule I classification of cannabis has created an environment that violates the Fourth, Fifth, Eighth, Ninth, Tenth, and Fourteenth amendments of the United States Constitution. In this chapter, I answered relevant, historic legal precedent questions from the Supreme Court on how common defenses used to perpetuate the "War on Drugs", and how such legal precedent legitimizes the movement of cannabis law reform.

Chapter IV

The Costs of Prohibition and Benefits of Legalization of *Cannabis sativa*

In this chapter, I will approximate a 'low and high' estimate of the total economic deadweight loss attributable to the Schedule I classification of *Cannabis sativa* based on the rejection of the 'recommendation' made by the Shafer Commission. The approximations will include the difference in costs of enforcement as estimated by *The War on Marijuana* which serves as a baseline evaluation for 2010, then extrapolated for all relevant years as outlined by A-1; a report on the relative fine difference in accordance to the Shafer Commission as outlined by A-2; 3 'low' aggregate estimate models from NORML and Gettman in A-5 and A-6, which are extrapolated as a base evaluation in A-7 and A-8, respectively, and Colorado in A-9; and 3 'high' aggregate estimate models by Gettman and NORML in A-12 and A-14, which are extrapolated as base evaluations in A-15 and A-16, respectively, and Colorado in A-17.

The overwhelming discrepancy between public sentiment on the legalization, regulation, and taxation of cannabis and its derivatives and the long-standing, immovable Schedule I classification of cannabis through the Controlled Substances Act (CSA) of 1970 has plagued the states of the nation in economic terms, directly and indirectly. The direct economic costs of prohibition can be divided into one of three main categories: policing, judicial and legal, and corrections' expenditures. Evidence has been provided

that enforcing the criminalization of cannabis possession is not well-founded while costing millions' freedoms in every facet of American life. While the impact of such prohibition is widespread, calculating merely the cost in dollars is difficult, and while attempting to calculate this number one will be left making trite assumptions to seek the totality of its destruction economically. This calculation alone merely covers how the 'War on Drugs' has removed the humanity of those afflicted by it.

The War on Marijuana: In Black and White published by the American Civil Liberties Union (ACLU) with specifics gathered from *The Budgetary Implications of Marijuana Prohibition* written by Jeffrey Miron Visiting Professor of Economics at Harvard University outlines and defines a 'high, medium, and low' estimate for each type of expenditures for each state and an aggregate summation for the United States. Where the indirect expenditures are the 'ripple effects' of the enforcement of cannabis prohibition laws throughout the United States. In *The War on Marijuana*, Miron uses different strategies to approximate these costs further into three different estimates: high, medium, and low, where the medium estimate is the mean between the high and low estimates.

Miron defines 'policing' expenditures to include all money spent on police equipment and salaries to arresting officers. Later, policing expenditures will include the opportunity costs, externalities, and other potential tradeoffs enforcing cannabis prohibition instead of pursuing possible offenders of traffic violations alongside other possible drug, violent, and/ or property crimes. Miron's basic approach to calculate the 'high' estimate of policing expenditures, "consists of prorating historical criminal justice system expenditures [analyzing] the fiscal cost of police expenditures on marijuana

possession arrests is estimated as the total budget for such services multiplied by the percent share of total arrests accounted for marijuana possession," (*The War on Marijuana*, ACLU, 2013). Miron estimates that only one-third of enforcement expenditures is allocated to arrests because while arrests are 'expensive,' police officers do much more than make arrests. This concern is mitigated to some extent because, "the costs of other non-enforcement activities are relatively low compared to arrests," (*The War on Marijuana*, 2013). Miron's calculations found 48 percent of costs enforcing marijuana prohibition are policing expenditures. Using this percentage helps with the inference of the 'high' policing expenditures estimate. The 'high' estimate of enforcing marijuana prohibition, according to Miron, amounts to $6.032 billion of which $2.916 billion, 48 percent, would be attributable to policing expenditures. Using the methodologies listed previously, the 'high' estimate for policing expenditures for the United States would be $2.916 billion costing each of the, "750,592 persons arrested for marijuana possession in 2010," (NORML, 2010), roughly $3,885 and each of the, "309.3 million American citizens in 2010," (Ewert, *United States Census Bureau,* 2015), $9.43 to fund for such policing. Likewise, the 'high' policing expenditures estimate for the state of Mississippi equals $14.59 million costing each of the, "8,281 persons arrested for marijuana possession 2010," (*Mississippi Marijuana Arrests,* 2010), $1762 and each of the "2.97 million Mississippi residents," (Ewert, *United States Census Bureau,* 2015), $4.91. Mississippi will be used as a baseline in estimating the approximate reduction/ savings due to the decriminalization of marijuana possession compared to the United States collectively because a majority, 39 of the 50 states, still criminalize such possession. The cost reduction between decriminalization in Mississippi results in a

reduction of 54.6 percent in costs attributed to each offender, and a 47.9 percent reduction percent reduction in costs to residents, averaging 51.25 percent. If all states in America were to decriminalize marijuana possession, policing expenditures would be reduced by $1.494 billion.

Miron's approach to calculate the 'low' estimate of policing expenditures uses the 2001 Washington State Institute for Public Policy (WSIPP) to serve as benchmark to measure the average cost of marijuana possession arrest comparted to the average annual cost of arrest for the rest of the country. This report serves as the only source for either the state or national level to have such information. The WSIPP report estimates, "the operating per unit cost of policing a marijuana possession arrest is $750 per arrest, which is 15 percent of the average cost per arrest," (*The War on Marijuana*, 2013). This average of $750 cost of policing a marijuana possession arrest or the 15 percent figure serves as a control where other states' data was not available.

Miron's calculations found that the total 'low' policing expenditures estimate cost Americans $578 million and Mississippi spending $2.89 million. The 'low' estimate for policing expenditures for the United States would be $578 million costing each of the, "750,592 persons arrested for marijuana possession in 2010," (NORML, 2010), $770 and each of the, "309.3 million American citizens in 2010," (Ewert, *United States Census Bureau,* 2015), $1.87 to fund for such policing. Likewise, using the same calculations on approximating the 'low' estimate for such costs, the state of Mississippi spent $2.89 million costing each of the, "8,281 persons arrested for marijuana possession 2010," (*Mississippi Marijuana Arrests,* 2010), $349 and each of the "2.97 million Mississippi residents," (Ewert, *United States Census Bureau,* 2015), $.97. The cost reduction

between decriminalization in Mississippi results in a reduction of 54.6 percent in costs attributed to each offender, and a 48.1 percent reduction percent reduction in costs to residents, averaging 51.35 percent. If all states in America were to decriminalize marijuana possession, policing expenditures would be reduced by $297 million using the 'low' estimate. With the 'middle' estimates for the reduction in policing expenditures being the average of the savings of the high and low profiles of $1.495 billion and $297 million from the respective profiles equaling $896 million in savings if decriminalization of marijuana possession was recognized in all 50 states.

The second category outlined by *The War on Marijuana* that Miron analyzes is 'judicial and legal' expenditures. Miron defines 'judicial and legal' expenditures are the dollars associated with the salaries of judges and district attorneys, court costs as well as fiscal costs of both defense and prosecution. Later, judicial and legal expenditures will include the opportunity costs, externalities, and other potential tradeoffs undergone pursuing misdemeanor marijuana possession convictions instead of convictions of traffic violations alongside other possible drug, violent, and/ or property crimes.

Miron's calculations found 38 percent of costs enforcing marijuana prohibition are judicial and legal expenditures. Using this percentage helps with the inference of the 'high' expenditures estimate in this category. The 'high' estimate of enforcing marijuana prohibition, according to Miron, amounts to $6.032 billion of which $2.228 billion, 38 percent, would be attributable to judicial and legal expenditures. Miron's approach to calculate the 'high' estimate of judicial and legal expenditures is made by, "multiplies the total judicial and legal expenditures by the percentage of marijuana-related proceedings in state courts resulting in felony convictions, using, in particular, a national fraction of

10.9% because state-level data are not available," (*The War on Marijuana*, 2013). This report estimates adjudication costs slightly differently.," (*The War on Marijuana*, 2013). Of the 13.12 million arrests made in 2010 (Persons Arrested, *Federal Bureau of Investigation*, 2011), 750,592 arrests were made for marijuana possession alone, making marijuana possession related arrests amounting to 5.7 percent of all arrests made in 2010. Available state data suggests that marijuana possession percentage share of total state cases is approximately twice as large as the share of total arrests accounted for by marijuana possession cases.

Miron states, "only 50 percent of all marijuana possession offenses are stand-alone arrests," (*The War on Marijuana*, 2013), making the upper-bound of the ratio of marijuana possession related arrests to total arrests to be 11.4 percent of all arrests.

Miron's calculations found that the 'high' estimate of judicial and legal expenditures to be $2.228 billion. Additionally, the 'high' judicial and legal expenditures estimate for the state of Mississippi amounts $9.28 million. Using the methodologies listed previously, if the 'high' estimate for such expenditures for the United States would be $2.228 billion costing each of the, "750,592 persons arrested for marijuana possession in 2010," (NORML, 2010), $2,968 and each of the, "309.3 million American citizens in 2010," (Ewert, *United States Census Bureau,* 2015), $7.20 to fund for such expenditures. Likewise, Mississippi spent $9.28 million costing each of the, "8,281 persons arrested for marijuana possession 2010," (*Mississippi Marijuana Arrests,* 2010), $1121 and each of the "2.97 million Mississippi residents," (Ewert, *United States Census Bureau,* 2015), $3.12. The cost reduction between decriminalization in Mississippi results in a reduction of 62.23 percent in costs attributed to each offender, and a 56.67 percent reduction

percent reduction in costs to residents, averaging 59.45 percent. If all states in America were to decriminalize marijuana possession, judicial and legal expenditures would be reduced by $1.325 billion.

Miron's approach in calculating the 'low' estimate in judicial and legal expenditures is also derived from the WSIPP report. The report found these expenditures to include, "the annual costs of adjudicating marijuana possession arrests, which is assumed to include court costs, as well as the fiscal costs of both defense and prosecution, as $400 per disposition sought on a marijuana possession arrest," (*The War on Marijuana*, 2013). This 'low' estimate that is derived from the WSIPP report should not be used as a benchmark for the totality of marijuana possession arrests because Washington state in 2001 became the fourth state to legalize medical cannabis in 1998, three years before the study was done. Also, Washington's acceptance towards cannabis reform was atypical of most states in 2001. This fact makes it likely that the WSIPP's estimate to much lower than the costs attributed to states with a less progressive stance on cannabis possession. Since it is estimated that only roughly one half of all marijuana possession offenses are 'stand-alone' arrests, Miron concludes that the, "per unit adjudication cost of a disposition sought for marijuana possession should lie somewhere between the lower-bound cost of marijuana possession adjudication amounting, "to 5.7 percent of the average cost per court case (400 of the 6,985, the average annual cost per court case) and the upper-bound cost amounting to 11.4 percent of the average court case (800/6,985). The cost Miron found the cost of $600 per unit adjudication cost per marijuana possession arrest to be most reasonable to calculate the 'low' estimate of judicial and legal expenditures.

The ‘low’ estimate equals $454 million for the United States; while the ‘low’ estimate of such expenditures for Mississippi amounts to $1.84 million. Using the methodologies listed previously, the ‘low’ judicial and legal expenditures estimate for the United States would be $454 million costing each of the, “750,592 persons arrested for marijuana possession in 2010,” (NORML, 2010), $604 and each of the, “309.3 million American citizens in 2010,” (Ewert, *United States Census Bureau,* 2015), $1.47 to fund for such expenditures. Likewise, the state of Mississippi spent $1.84 million costing each of the, “8,281 persons arrested for marijuana possession 2010,” (*Mississippi Marijuana Arrests,* 2010), $222 and each of the “2.97 million Mississippi residents,” (US Census Bureau, 2010), $.62. The cost reduction between decriminalization in Mississippi results in a reduction of 63.25 percent in costs attributed to each offender, and a 57.82 percent reduction percent reduction in costs to residents, averaging 60.54 percent. If all states in America were to decriminalize marijuana possession, policing expenditures would be reduced by $275 million using the ‘low’ estimate. With the ‘middle’ estimates for the reduction in policing expenditures being the average of the savings of the high and low profiles of $1.325 billion and $275 million from the respective profiles equaling $800 million in savings if decriminalization of marijuana possession was recognized in all 50 states.

The final group Miron examines is ‘corrections’ expenditures. Miron defines ‘corrections’ expenditures as the dollars spent on the construction of new state prisons; county correctional facilities; and local jails, alongside the cost of housing inmates, the cost of employing guards, officers, and other staff to supervise such facilities, and the costs associated with supervisory/ probationary mediation used as punishment to

marijuana possession offenders. Later, corrections expenditures will include the opportunity costs, externalities, and other potential tradeoffs undergone incarcerating misdemeanor and/ or felony marijuana possession offenders instead of convictions of traffic violations alongside other offenders of possible drug, violent, and/ or property crimes.

Miron's approach to calculate the 'high' estimate of corrections expenditures is made by, "multiplying the fiscal expenditures on local and county correctional facilities [without calculating the costs of state, federal, or privatized facilities] by the ratio of stand-alone marijuana possession arrests to all total arrests," (*The War on Marijuana*, 2013). As stated before, the ratio of 'stand-alone' marijuana possession arrests to total arrests is somewhere between nearly 6 to 12 percent of all total arrests in 2010. Miron estimates correction costs to, "equal nearly 1 percent of total corrections expenditures including state prison facilities, where 1 percent corresponds to the weighted average of the proportion of prisoners incarcerated on marijuana charges in five states [California, Georgia, Massachusetts, Michigan, and New Hampshire]," (*The War on Marijuana*, 2013). While the 'high' estimate is just an approximation of the 'weighted average' of the proportion of prisoners incarcerated on marijuana charges, all of the states except for Georgia, by 2010, had legalized the medical use of cannabis. Likewise, in 2010, the four states used in the 'weighted average' to have legalized medical marijuana, California, Michigan, New Hampshire, and Massachusetts respectively had, "the ninth, the fourteenth, the nineteenth, and the lowest incarceration rates of marijuana possession, while Georgia had the eighth largest," (*The War on Marijuana,* p. 131, ACLU, 2013). Additionally, this approximation in the 'high' estimate of corrections expenditures is

foolish because this 'weighted average of the proportion' of prisoners incarcerated on marijuana charges doesn't account for privatized, supervisory/ probationary mediation on offenders. The 'high' estimate is undermined further when Carrie Teegardin of the *Atlanta Journal Constitution* wrote, "Georgia's probation rate is 6,161 per 100 thousand residents, the highest in the nation, nearly 4 times greater than the national average of 1,568 per 100 thousand residents," (Teegardin, *Atlanta Journal Constitution*, 2015). Teegardin explains the reasoning behind such grossly inflated numbers by stating, "Nearly 80 percent of people on misdemeanor probation in Georgia are supervised by private companies, [that have a perverse,] profit motive to have as many people on probation for as long as possible," (Teegardin, 2015). corrections expenditures by the percentage of marijuana-related proceedings in state courts resulting in felony convictions, using, in particular, a national fraction of 10.9% because state-level data are not available," (*The War on Marijuana*, 2013). Additionally, the legalized medical appropriation of cannabis' main goal is to ensure patients have safe access to cannabis and are removed from the 'black market' that is typified by use of other drugs. The four states other than Georgia used in this 'weighted average' generally would not have many 'potential' offenders convicted of marijuana possession and because of that fact alone would increase the 'proportion of prisoners incarcerated on marijuana charges.' Likewise, those in those four states incarcerated on marijuana charges have a higher propensity to be felony offenders than compared with states who do not recognized the medical use of marijuana and still criminalize it.

Miron's calculations found 14 percent of costs enforcing marijuana prohibition are corrections expenditures. Using this percentage helps with the inference of the 'high'

corrections expenditures estimate. The 'high' estimate of enforcing marijuana prohibition, according to Miron, amounts to $6.032 billion of which $827 million, 14 percent, would be attributable to corrections expenditures. Miron's calculations infer the 'high' corrections expenditures estimate to be $827 million for the United States and $4.07 million for Mississippi. Using the methodologies listed previously, the 'high' estimate for corrections expenditures for the United States would be $827 million costing each of the, "750,592 persons arrested for marijuana possession in 2010," (NORML, 2010), $1102 and each of the, "309.3 million American citizens in 2010," (Ewert, *United States Census Bureau,* 2015), $2.67 to fund for such expenditures. Likewise, using the same calculations on approximating the 'high' estimate for such costs, the state of Mississippi spent $4.07 million costing each of the, "8,281 persons arrested for marijuana possession 2010," (*Mississippi Marijuana Arrests,* 2010), $491 and each of the "2.97 million Mississippi residents," (Ewert, *United States Census Bureau,* 2015), $1.37. The cost reduction between decriminalization in Mississippi results in a reduction of 55.4 percent in costs attributed to each offender, and a 48.69 percent reduction percent reduction in costs to residents, averaging 52.05 percent. If all states in America were to decriminalize marijuana possession, corrections expenditures would be reduced by $430 million.

The low estimate in calculating the corrections expenditures are estimated as, "the number of individuals in a local or county correctional facility for a marijuana possession offense multiplied by the average state-level per diem cost of such facilities, plus the number of individuals on local or community supervision," (*The War on Marijuana*, 2013). The average marijuana possession offender will spend, "5.5 days in jail where the

national average per diem jail costs $95 per day," (*The War on Marijuana*), making the incarceration of such offender cost $523, with an additional, "74.5 days spent in local supervision, costing on average $2 per day," (*The War on Marijuana*), equaling $149 for the extended supervision of a non-violent drug offender. If each of the 750,592 marijuana arrests made in 2010 cost an estimated $672 for each arrests, then the 'low' estimate of corrections expenditures would equal $504.4 million, not the $164 million inferred by the report. Likewise, using the average cost of $672 per marijuana possession arrest, the state of Mississippi spent $5.6 million, where the Miron Report estimates it only to be, "$807 thousand," (*The War on Marijuana*). This 'low' estimate contradicts even the simplest form of calculations where the more realistic estimate is almost 700 percent higher than given on such report.

Using the methodologies listed previously, the 'low' estimate for corrections expenditures for the United States would be $164 million costing each of the, "750,592 persons arrested for marijuana possession in 2010," (NORML, 2010), $218 and each of the each of the, "309.3 million American citizens in 2010," (Ewert, *United States Census Bureau,* 2015), $.53 to fund for such expenditures. Likewise, using the same calculations on approximating the 'low' estimate for such costs, the state of Mississippi spent $807 thousand costing each of the, "8,281 persons arrested for marijuana possession 2010," (*Mississippi Marijuana Arrests,* 2010), $97 and each of the "2.97 million Mississippi residents," (Ewert, *United States Census Bureau,* 2015), $.27. If the 'low' estimate of the report were taken, then it would be calculated by dividing the 'medium' estimate of policing expenditures of $2.4 million divided by 3.022 equaling $807 thousand and would cost each of the 2.97 million citizens just $.27. The cost reduction between

decriminalization in Mississippi results in a reduction of 55.5 percent in costs attributed to each offender, and a 49.05 percent reduction percent reduction in costs to residents, averaging 52.28 percent. If all states in America were to decriminalize marijuana possession, policing expenditures would be reduced by $86 million using the 'low' estimate. With the 'middle' estimates for the reduction in policing expenditures being the average of the savings of the high and low profiles of $430 million and $86 million from the respective profiles equaling $258 million in savings if decriminalization of marijuana possession was recognized in all 50 states.

While Miron's report may not necessarily represent the most accurate costs in enforcing marijuana possession laws, it does, however, illustrates how expensive such enforcement is. For example, the total cost for each of the over 700 thousand offenders arrested for marijuana possession in 2010 using the 'high' estimate would cost each offender $7,955. While the average offender $3,374 for Mississippi, a state with decriminalized possession with the incarceration rate for marijuana possession in 2010 still in the upper 20th percentile for all states. Additionally, the total savings amount the collective fifty states in the union amounts to $3.249 billion using the 'high' estimate. Likewise, using the 'low' estimate, each offender arrested for marijuana possession for the collective United States amounts to $1,592 and $668 for each offender in Mississippi. Additionally, nationwide decriminalization would save $658 million for state corrections and judicial agencies. The direct costs of marijuana possession enforcement amount to huge numbers where, in 2018, 30 states and the District of Columbia have approved medical use of marijuana, thereby, legalizing possession for those card-carrying

members. Miron's report represents a 'best' estimate to the total enforcement costs, where the number was previously incalculable.

While the report made offers an approximation of enforcement, but the report does have several instances where it becomes less accurate. First, Miron uses estimates, and estimates are just that, estimates, instead of direct numbers from each state and the United States as a whole. The policing expenditures in the 'high' estimate is calculated by using an overtly simple equation, derived by the total police budget for each state multiplied by the percentage share of total arrests accounted for marijuana possession. The approximation using this 'formula' would lead one to assume that each arrest would cost the same to pursue, regardless of the severity of the crime. The approximation used by Miron when calculating the 'high' estimate to relevant policing expenditures should be much higher than what is calculated on the basis that while marijuana possession arrests account for a much higher percentage of arrests than say the trafficking controlled substances other than marijuana, arresting offenders of trafficking of other controlled substances often entails investigative, undercover work by police officers alongside the use of informants. Where, "50 percent of all marijuana possession offenses are not 'stand-alone' offenses," (*The War on Marijuana*), meaning the other half of all other marijuana possession arrests are made when another offense is committed. The occurrence of when the other offense was committed, often leads led officers to question the possession of marijuana when such possession would not be questioned or the contact with police would be less likely without the other offense. In 2010, the 750,592 marijuana possession arrests did account for 5.72 percent of the over 13 million total arrests made that year, the costs associated with each arrest is likely to much less than the

other 785 thousand drug arrests made in the same year. Furthermore, Miron estimates that the costs of adjudicating marijuana possession arrests are derived using the Washington State Institute for Public Policy 2001 Report, a state that did not utilize the policy of decriminalization for marijuana possession. Miron states, "our [WSIPP's] report conservatively estimates the operating per unit cost of adjudicating a marijuana possession offense, which is assumed to include court costs, as well as the fiscal costs of both defense and prosecution, as: $400 per disposition sought on a marijuana possession arrest," (*The War on Marijuana*). To understand this statement made by Miron, the adjudicate[on] according to Black's Law Dictionary means to pass upon judicially; to settle, or decree; to sentence or condemn, or to settle in the exercise of judicial authority, to determine finally. In essence, in order for an offense to be adjudicated, it must carry a criminal offense, either a misdemeanor or a felony. The only states where the fines are less than the $400 per disposition are the fourteen states that have decriminalized marijuana possession, where the average fine is $202.36, where every other states treats marijuana possession as a misdemeanor where the maximum fine for such offense is $1000 per disposition. Additionally, the statement made by Miron includes the verbiage of 'arrest' meaning the offense of marijuana possession made in his statement did not include the fourteen states with decriminalization. Negating these facts, assumed to be true, allow for the upper-bound of the 'low' estimate of the judicial and legal expenses to be much higher than he puts forth in his paper. Further, the estimate to adjudicate each marijuana possession offense/ arrest doesn't include any expenses that could be related to the result of a conviction which would limit access to economic gains through employment as well as to post-secondary educational opportunities.

Another major issue with the Miron Report is the statistic estimating the 'high' end of corrections expenditures. Miron estimates, "corrections costs as equal to 1 percent of total corrections expenditures, including state prison facilities, where 1 percent corresponds to the weighted average of the proportion of prisoners incarcerated in five states, California, Georgia, Massachusetts, Michigan, and New Hampshire," (*The War on Marijuana*). While the facts of his statement are not in question, the fact of the matter is that every state except for Georgia allows for the medical use of marijuana. If a state allows for the use of medical marijuana, then that state's enforcement of marijuana allows would be more likely than non-medical states to arrest felony possession/ trafficking of marijuana. This presumption is supported with data extrapolated from Miron's report. For example, the states with medical marijuana, California, Massachusetts, Michigan, and New Hampshire, represented a 26.831 weighted-average percent of marijuana offenders as a proportion of all drug offenders, where Georgia had a 65.1 percent of drug offenders that were represented by marijuana possession arrests and the average amongst other states with non-medical legalization of marijuana equaled to 52.62 percent. Additionally, the states from the example provided in the Miron report had a 24.135 weighted-average percent of marijuana arrests that were felonious with Georgia only have a 9.5 percent and the average of non-medical states equaling 11.37 percent. Finally, these states' incarceration rates for marijuana possession decreased by 4.381 percent from 2001 to 2010 while the state of Georgia increased such rate by 19.9 percent along the same time frame and the average change in the incarceration rate of marijuana possession offenders among non-medical states is a decrease of .022 percent. While California, Massachusetts, Michigan, and New Hampshire only represent 28.414 percent

of the total population of states legalizing medical marijuana at the time, these facts exemplify the flaw in using the weighted-average in correction costs of the five states as a representative sample in estimating the aggregate costs in corrections in regards to enforcing marijuana possession.

The logical flaws listed previously illustrates how Miron's analysis of each kind of expenditure relevant to the enforcement of marijuana possession is likely too conservative on both the 'high and low' estimates for policing, judicial and legal, and corrections expenditures. However, his report does show the effectiveness in concerns of cost savings that would be attributed to decriminalization if all fifty states enacted such policy towards marijuana possession without legalizing the medical or recreational use of such. Mississippi is an ideal state to compare the percentage decrease in cost when comparing the savings of decriminalization to the criminalization of marijuana possession because, while, Mississippi does have the tenth highest incarceration rate for marijuana possession among the fifty states and the District of Columbia, it ranks fifth highest among the fourteen states with decriminalization of marijuana possession. The incarceration rate of marijuana possession for the state of Mississippi in 2010 was 317 per 100 thousand citizens and the population weighted average incarceration rate of all the states with decriminalization was 337 per 100 thousand citizens. At face value, it would seem that Mississippi is slightly less likely to pursue an arrest for a decriminalized charge than the other states, but upon further analysis Mississippi becomes closer to the mean in incarceration rates. The total population of the fourteen states with decriminalization equaled to 81.957 million in 2010, with Mississippi have only 3.62 percent of that total. Additionally, Mississippi contributed 3.402 percent of the weighted

average incarceration rate, meaning the population of Mississippi compared to its contribution to the weighted average incarceration rate was 93.983 percent in line. Compared to states like New York whose population represented 23.64 percent of the population, its contribution to the weighted average incarceration rate was 37.529 percent, meaning New York officials were 1.588 times more likely to pursue an arrest than the aggregate of the fourteen states. Another reason why Mississippi should serve as the 'model' to approximate the percentage savings for decriminalization versus the misdemeanor approach to enforcing marijuana laws is that among the states with decriminalization Mississippi has the lowest cost per citizen to enforce marijuana laws at $5.62, where the average among these states is $12.87, as of 2010. Furthermore, Mississippi's marijuana possession arrests as a percentage of total drug arrests is 42.8 percent while the United States as a whole is 49.75 percent, showing that an arrest for marijuana possession is less likely to be pursued in Mississippi compared to the nation as a whole. While the sentiment towards marijuana reform has changed drastically since 2010, the facts concerning the cost efficiency around decriminalization are still accurate. Prior to 2011, only (Ohio, Minnesota, Mississippi, North Carolina, New York, and Nebraska) six states decriminalized the possession of marijuana representing 18.98 percent of the population in 1978, the last year in this era when a state changed its stance on marijuana possession. As of 2017, (Connecticut, Rhode Island, Vermont, Missouri, Maryland, Delaware, Illinois, and New Hampshire) eight more states decriminalized marijuana possession. Even after a 33-year gap between the sixth and seventh state decriminalizing such possession, the growth in acceptance in decriminalization between

2011 and 2017 grew on average 9.48 percent in relation to the population of the United States and grew 12.81 times faster than the population of the United States grew.

While decriminalization would dramatically lower the incarceration rate; expenditures concerning policing, judicial and legal, and corrections as outlined by Miron; and help alleviate some of the burden the War on Drugs has placed on the criminal justice system throughout the United States, outright legalization for the state of Mississippi would emblazon the agrarian economy of the state. Despite the fact, Mississippi has decriminalized the possession of marijuana, arrests for marijuana possession still occur. For example, while decriminalization, on paper would hereby eliminate all arrests for such violation, Mississippi, as of 2010, has an incarceration rate of, "520 marijuana arrests per 100 thousand residents," (Lopez, *Vox Magazine,* 2014), and an annual incarceration rate of, "12,016 per 100 thousand marijuana users," (Lopez, 2014). Furthermore, while the direct costs of marijuana enforcement are difficult to approximate, the magnitude of such expenses can be felt. Currently, marijuana offenses represent over 40 percent of all drug arrests in the state of Mississippi, even though support within the state is growing with regards to outright legalization.

The growing support can be exemplified with Ballot Initiatives 48 of 2016 and Ballot Initiative 60 of 2017, which would, "declare an end to the prohibition on cannabis, and fully legalize the use, taxation (if applicable), medical use, cultivation and sale of both industrial hemp, and cannabis, only for adults who are 21 years or older…[and] the legislature shall add a process for expunging the criminal record of any person convicted on non-violent cannabis possession, sales, and manufacture against the State of Mississippi," (Jacobs, *Ballot Initiative 48,* 2016). While neither Ballot Initiative 48 nor 60

garnered enough certified signatures to place the initiatives on the ballot for the following year, Mississippi's legislators, Bomgar, Sykes, Smith, Blackmon, and Scott, introduced House Bills that would extend the hopes of marijuana legalization similar to those outlined by ballot initiatives. House Bill 179 introduced by Representatives Bomgar, Sykes, and Smith, goal was to, "allow the therapeutic use of marijuana for certain patients who have debilitating medical conditions by establishing Mississippi Medical Marijuana Pilot Program Act," (Bomgar, HB 179, 2017). House Bill 179 was referred to House Committees on Drug Policy and Public Health and Human Services on January 3, 2017, but died just four weeks later in committee on January 31, 2017. Furthermore, House bills 1443 and 1444, introduced representatives Blackmon and Scott, respectively; goal was to, "make certain declarations regarding the powers of the state and retail marijuana and retail marijuana products [by creating a bill to be known as] the Mississippi Retail Marijuana Code," (HB 1443 and 1444, 2017). Both of these bills were referred to the House Committee on Drug Policy on January 16, 2017 and died in committee on January 31, 2017. Additional internal support regarding the extension of drug law reform came with House Bills 459 and 1441. These bills' purpose was to, "extend the date of the repealer on Harper Grace's Law from July 1, 2017 to July 1, 2020," (White, *House Bill 459,* 2017), and to, "authorize CBD oil to be obtained [by all entities expressed in the portion of HB 1231 outlining the permissive use of CBD oil] and further, the State Department of Health," (Bomgar, *House Bill 1441,* 2017). House Bill 459 was introduced to the House Committee on Public Health and Human Services by Representatives White and Sykes on January 9, 2017, and further died in committee on January 31, 2017. House Bill 1441 was introduced to the House Committee on Public

Health and Human Services by Representative Bomgar on January 16, 2017, and further died in committee on January 31, 2017.

The attempts of modifying the legality of the medical appropriation 'allowing the therapeutic use of marijuana for certain patients who have debilitating medical conditions' by internal governmental agents through the introduction of House Bills or the external governmental processes like that of Ballot Initiatives 48 and 60 have been thwarted by arcane governmental bureaucratic means leaving all attempts to change the legality of marijuana in the states futile in attempting to relieve the pain of the state having, "the fourth highest arrest rate per 100 thousand users while having the lowest yearly users as a percent of the state's population," (Gettman, *Marijuana in Mississippi: Arrests, Usage, and Related Data,* 2009). Gettman of *Drug Science* goes on to explain in *Marijuana in Mississippi* the opportunity costs associated with the enforcement of marijuana laws as, "the consequences of making specific budgetary decisions where providing funds for one program often means accepting less or no funds for some other government activity," (Gettman, 2009). For example, enforcing laws regarding to marijuana possession deprives law enforcement of funds to apply to other investigations and activities. With estimates derived by Miron's Report and by the 2001 Washington State Institute for Public Policy Report, somewhere between 5 and 10 percent of all arrests are made for marijuana possession alone. If arresting officers were free to pursue crimes against another person like murder, rape, robbery, assault, larceny, and motor vehicle theft, then such clearance rates would improve. A clearance rate can be defined/ calculated, "by dividing the number of crimes 'cleared' by the total number of crimes being reported," (*Clearances*, Federal Bureau of Investigation, 2014), where a crime

being cleared leads to a person being, "Arrested, charged with the commission of the offense, or turned over to the court for prosecution," (*Clearances, 2014).* Jon Gettman exclaims that the clearance rates/ percentages for the crimes in the state of Mississippi in 2007 listed above are, "54.8, 28.4, 19.2, 34.9, 18.6, and 16.4, for murder, rape, robbery, assault, larceny, and motor vehicle theft respectively," (Gettman, 2009). Meaning that 45.2 percent of all murders, 71.6 percent of all rapes, 80.8 percent of all robberies, 65.1 percent off assaults, 81.4 percent of all crimes of larceny, and 83.6 percent of all motor vehicle thefts weren't cleared. If the clearance rates could be heightened because of arresting agents not pursuing marijuana offenses, shouldn't the pursuing of more heinous crimes be done especially when the public at large is grossly more offended by such crimes when compared to marijuana possession?

In order to extend the estimation of the direct/ indirect costs of prohibition and benefits of legalization of cannabis, I will follow the approach used by Miron as explained in *The War on Marijuana* namely on giving and continuing the 'high, low, and middle' estimate approach to each form of expenditure/ benefit attributable to each cost of prohibition and benefit of legalization of cannabis. The first of the four categories associated with the costs/ benefits of cannabis law reform is the aggregate expenditures associated with marijuana enforcement with regards to the policing, judicial and legal, and corrections expenditures as outlined by the ACLU report from 1972 to the most recent year where the relative data is available.

While the ACLU report approximates a 'high, low, and middle' estimate in enforcement costs attributable to all fifty states for 2010, these estimates only consists of one of the forty-five years in costs since the Shafer Commission. While Miron equated

the ‘total’ costs for ‘policing, judicial and legal, and corrections’ expenditures for this year, 2010, his report analyzes just that. To extrapolate the aggregate expenditures from 1972 to 2017 and for each year individually, the model in approximating these costs for the totality of each of the costs/benefits of each segment of marijuana legalization will be as follows: for the year immediately after the model estimates or values, the benchmark will be ‘inflated’ by the relationship of Y_{t+1} divided by Y_t, then multiplied by the base year’s valuation, then extended to the future, 2017. Likewise, for the year immediately before the model estimates or values, the benchmark will be ‘deflated’ by the relationship of Y_{t-1} divided by Y_t then multiplied by the benchmark, then retrograded back to 1972. As A-1 shows, the total ‘high estimate’ costs in enforcement, using 2010 as the benchmark from the ACLU report, equal $202,317 million, the ‘low estimate’ for enforcement costs equaling $40,106 million, and the ‘middle estimate’ costs in enforcement equaling $121,199 million.

Another expenditure component when discussing the costs of marijuana enforcement is the expenditures associated to each offender caught with possession of marijuana. Per the ACLU report, the ‘low, middle, and high’ estimates in enforcements are $1.196 billion, $3.614 billion, and $6.032 billion for each estimate respectively. In 2010, “750,591 people were arrested for marijuana possession,” (Stroup, *NORML*, 2011), meaning per each offender enforcements costs are as follows: $1,593 for the ‘low’ estimate, $4,815 for the ‘middle’ estimate, and $8,036 for the high estimate in 2010. Additionally, the totality of expenditures associated to each offender will be estimated with the same methodology as mentioned before. Where the respective fine amounts for each offender will be either deflated or inflated from 2010, in a range from 1972 to 2016,

the most recent year where the total number of marijuana possession arrests is available, as well as the suggested fine amount as supposed by the Shafer Commission where it states in the "Discussion of State Recommendations" from *Marihuana: A Signal of Understanding*, "where marihuana is concerned, continuing societal disapproval requires that the behavior occur only in private if at all. Public use, under the proposed scheme, would therefore be punishable by a fine of $100," (*Marihuana: A Signal of Understanding,* 1972). Additionally, the states that have since decriminalized the possession of marijuana as the Shafer Commission suggested, the fine has ranged between $100 to $250, so there will be two estimates for each the 'low, middle, and high' estimates the total difference in the relevant fine amounts, where one will have the Shafer Commission's 'suggestion' inflated in accordance to GDP growth rates between 1972 and the relevant year, after 1972, and the second will remain at $100. Each estimate for every year from 1972 to 2016, will be calculated as the difference between the estimated cost for each offender, where one estimate will include the 'recommendation' of the Shafer Commission as a $100 fine for each offender for all years; while the other will be estimated with the 'inflated' fine recommendation as shown as the 'high, low, and middle adjusted estimates' in A-2. Furthermore, this amount will be subtracted from the product of the number of marijuana offenders for each year multiplied by the respective 'deflated' amount for each 'high, low, and middle' expenditures associated to each offender as approximated by the ACLU report. The average between the two 'high' estimates in the difference of such enforcement costs from 1972 to 2016 equals: $104,748 million. The average between the two 'low' estimates in the difference of such enforcement costs from 1972 to 2016 equals: $13,562 million. Finally, the average of the 'middle' estimates on

such expenditures equals: $60,498 million. The distinction between the two estimates within each level is one where the first of the two has kept the Shafer Commission 'recommendation' and the second has adjusted the 'suggested' fine amount in line with GDP growth. The calculations as listed above are included in detail in Appendix B.

The largest and most complex portion in calculating the total costs of prohibition and the potential benefits of marijuana legalization (a combination of legalization for medical and recreational use for adults over the age of twenty-one will be used in some extent) for both the 'low and high' estimate valuations going forward. These valuations will examine how the Schedule I classification of marijuana and all its derivatives has acted as a 'deadweight loss' and thwarted the legal industry since the 'recommendation' of the Shafer Commission as outlined in *Marihuana: a Signal for Understanding (1972)*. If such 'recommendation' were followed and guided by the Nixon presidency, then it is likely that states and people of such states would follow the path towards legalization for either medical or recreational use or some combination of the two in a timeline very similar as the current paradigm has shown, but having started in 1972, instead of 1996, with the passing of Proposition 215 in California. Once again, several models will be used to approximate a relevant baseline valuation for an individual year, which will then be inflated/ deflated for all years from 1972 to 2016(7) for each a 'low and high' estimate.

The first 'low' estimate's baseline is derived from a compilation of NORML's 1997 United States Median Farm and Retail Valuation Estimates as outlined in A-3. The average of the median farm value and the median retail value equals $27.013 billion in 1997. This year's valuation is of extreme importance because it can serve as the 'black

market' valuation. Describing it as such is appropriate because 1997 is a year after medical marijuana was legalized and was a gap year for any other state following the suit of California. The 1997 valuation will be inflated by the 'marginal' increase in the population of states that followed the pattern of medical legalization started by 1996 until 2016(7), when compared to the annual change in the United States total population. Additionally, in years where no states extend medical appropriation of marijuana the total percent in support will decrease while the support 'remains' constant the United States' total population will increase. To extend NORML's 1997 median valuation, it will be compounded by the 'marginal' percentage change in support from 1997 to 2013, the last year before the legalization of the recreational use of marijuana for adults over the age of 21 came to fruition in the states of Colorado and Washington. This valuation model traces the 'aggregate' from 1997 to 2013, where the average of these valuations: $80.659 billion, in A-5, will serve as the 2005 base estimate in calculating the total economic 'deadweight loss' from 1972 to 2016, as outlined by A-6.

The second 'low' estimate's baseline is derived from a compilation of Jon Gettman's *Marijuana Production in the United States* (2006). In his report, it is estimated that the, "total marijuana cultivation in the [United States] is valued at $35,804 million," (Gettman, *Marijuana Production*, 2006). This valuation is extended in a similar manner as the first 'low' estimate by NORML, where this valuation is inflated by the yearly 'marginal' increase of medical marijuana from A-4, from the years of 2006 to 2014. This valuation model is extended one year beyond NORML's valuation because it accounts for 75 percent of that of Gettman's while being made nearly ten years earlier. It would be irrational to think that the value of this industry would only increase at a 2.86 percent

annualized rate over that decade while the states legalizing marijuana for medical use increased at a 5.21 percent over that same time period, or from 32.02 million in 1996(7) to 53.20 million in 2006, nearly a 70 percent increase in support. To mitigate the concerns that while the states whose support for legalization of this sort does not necessarily mean the number of patients using such legalization would increase by such amounts either. Even after allowing Gettman's valuation to be compounded one year after the expansion of legalization made by Colorado and Washington, the total valuation in 2014, using such 'marginal' increase in support of medical marijuana, amounts to $87.393 billion, as outlined in A-6, will serve as the 2014 base estimate in A-8.

The final 'low' estimate's baseline is derived from the 2014 annual sales of Colorado's legalized market amounting to, "$699.20 million," (Baca, *Colorado Marijuana Sales*, 2015), raising an estimated, "$67.6 million in tax revenue," (*Colorado: Marijuana Tax Data*, 2018). In 2015, when all the tax revenue was collected, Colorado's population of 5.4 million and representing 1.7 percent of the total population of the United States, it can be interpreted that the total valuation of legal marijuana in the United States would be around $41,129 million, but this approximation is not accurate because marijuana taxes are collected only by people who use it through its now legal channels. Likewise, the population model is ineffective because marijuana taxes are not equally spread by the totality of the state's population. Thereby, using the state's 'marijuana market share' when compared to the United States total estimated marijuana users would more appropriately estimate both the total of tax revenue generated if all fifty pushed for the legalization as seen in Colorado and the total valuation estimate of legal marijuana in the United States. NORML's *Colorado Crop Estimates* again uses statistics

from 1997, where it is likely that reports of marijuana usage are too conservative because of people's natural apprehension to the admittance of breaking a law. Regardless of this conservative estimate, NORML estimates Colorado's, "marijuana market share equals ninety-three hundredths of one percent, while making up 1.43 percent of the total US population," (*Colorado Crop Estimates*, NORML, 2015). It can be derived that using Colorado as a baseline, the total valuation of legal marijuana could amount to $75,183 million if using NORML's 'marijuana market share' or $48,895 million if using its 'population share', with the average of these two estimates equaling $62,039 million. Additionally, in order to mitigate for the next year of legalization, the Colorado Low Estimate should be inflated by the 'marginal' increase in acceptance of medical marijuana for 2014, or an increase of 28.28 percent, bringing its 2015 valuation estimate to $79.583 billion.

The three 'low' estimate models will be known as: NORML Low Estimate, Gettman Low Estimate, and 2015 Colorado Valuation Estimate with values of $80.659; $87.393; and $79.583 billion will serve as the baseline values for the years of 2013, 2014, and 2015 respectively. These estimates will then be inflated/deflated from the baseline year, to include all years from 1972 to 2016(7), to estimate the total economic 'deadweight loss' of cannabis prohibition from 1972 to 2017. The totals in economic 'deadweight loss', according to the valuation methods, inflated/deflated with GDP 'growth' rates, are as follows: $1,913.5; $1,987.2; and $1,755.0 billion for the NORML Low Valuation Estimate, Gettman Low Valuation Estimate, and 2015 Colorado Valuation Estimate, as outlined in Appendices G, H, and I respectively.

The first types of expenditures in the 'low' estimate, the 'low' aggregate total as estimated by Miron from 1972 to 2016, as outlined in A-1, and the fine expenditures, consisting of the averages of the 'recommendation' of the Shafer Commission being at the same level of $100 per marijuana possession offense from 1972 to the current fiscal year and the 'recommendation' being inflated by the growth in GDP, as outlined in A-2. The 'low' estimate in fine expenditures would be the total amount of dollars offenders would have spent if all fifty states would have followed the 'recommendation' of the Shafer Commission, instead, in the time period since the Shafer Commission, 25 million Americans have been arrested for the possession of a plant, instead of treating such possession as much of an inconvenience as a noise complaint. Additionally, the aggregate 'low' estimate sum of the policing, judicial and legal expenditures from Miron would cost each marijuana possession offender $2122 as a national average, but in the state of Mississippi, the same offense would cost $668. Miron reports that the lowest estimate of enforcement costs are nearly three times too high when compared to a state with decriminalization, and if the Schafer Commission's recommended fine amount were inflated by GDP growth amounts the fine would amount to $1143, still nearly 46 percent lower than the 'low' estimate in Miron's report. If each of the marijuana possession offenders made such fine amounts instead of the expenditures taken from Miron's report, then the total cost of enforcement would be attributable only to those guilty of such offense, and not to all citizens like the current model of enforcement demands. Despite the misappropriation in law enforcement resources pursuing marijuana possession offenders, the total spent in law enforcement as well as the fine amounts estimated by Appendices 1 and 2, equals $53.67 billion. Likewise, these resources amount to roughly

80 percent of the DEA's total budget for the same time period, as outlined by A-10. The data in A-10 was gathered from the *Department of Justice: Budget Trend Data* Report made available in 2004. The report gives the total budget for the DEA from 1975 to 2003, where the budget for the years 1972 to 1974, and 2004 to 2016 were approximated based on the average annual increase in budget, then inflated and deflated for the respective years. The decriminalization of marijuana possession from the year of 1972 would have nearly doubled the capacity in more pervasive drug issues facing the United States like the opioid epidemic that is currently taking the lives of, "53,332 in 2016, with 20,145 coming from synthetic opioids; 15,446 coming from heroin; 14,427 coming from natural and semi-synthetic opioids; and another 3,314 stemming from methadone," (*Overdose Death Rates,* National Institute on Drug Abuse, 2017). The resources that have been used to assuage the 'nuisance' on marijuana possession offenders could have more appropriately used to discourage the illegal distribution and use of such opioids.

The amount of money spent to pursue and enforce marijuana possession and the money spent on fines relevant to being guilty of violation such laws pales in comparison to the amount of economic 'deadweight loss' attributable to the inability of legal marijuana to be a reality. While the NORML and Gettman Low Estimate are purely hypothetical, the 2015 Colorado Valuation Estimate Model extrapolates actual data to the United States as a whole, and has been mitigated on the estimated 'marijuana market share' and the 'US population share' as estimated by the National Organization for the Reform of Marijuana Laws along with the increased acceptance of medical marijuana for that year. This model should be used as an ideal benchmark for the rest of the United States because Colorado has the first and longest running legal infrastructure for the

regulation of the use of marijuana for adults over the age of 21, its population is ranked 25th, its 'marijuana market share' is also near the median ranked 24th, and its median farm and retail value of harvest is ranked 24th as well. Additionally, the 2014 Colorado Valuation Estimate is only extrapolated using the first year of retail sales in the state.

The 'high' valuation models are an extension of the 'low' valuation estimates, namely, a Gettman, NORML, and a Colorado estimate. Additionally, each one will be generated from a 'baseline' valuation for a given year, then inflated/ deflated for all years from 1972 to 2017 for both the Gettman and NORML High Valuation Estimate, as outlined in Appendices L and N. The first 'high' valuation method includes the Gettman High Valuation Estimate Model, where as before, the valuation $35.804 billion, as outlined in *Marijuana Production in the United States (2006)*, is inflated by the increased acceptance in medical marijuana from its base year of 2006 to 2012, the year that recreational use of marijuana was legalized in both Colorado and Washington, from 2012, the growth in valuation percentages will not be the annual change in acceptance of medical marijuana, but rather the annual increase of acceptance of recreational use of marijuana, as outlined in A-11. A-11 shows how the inclusion of Colorado and Washington added 12.006 to the total percentage of states with acceptance of recreational marijuana of the 314.1 million people in America as of 2012. The next series of jurisdictions that legalized cannabis for recreational use were Alaska and the District of Columbia, adding 1.397 to the 12.006 million attributed by the states legalizing in 2012, this added 1.397 is a 11.64 percent increase but will be divided by two because of the two-year interval between 2012 and 2014. The next series of states legalizing the recreational use of marijuana includes California, Nevada, Oregon, Massachusetts, and

Maine in 2016, adding 54.48 million people to the states supporting recreational marijuana for adults 21 or older. This increase in the support of recreational marijuana makes the annual percentage change between 2014 and 2016 at 203.23 percent. Using the baseline amount of $35.804 for 2006, and the 'marginal' change in acceptance of medical marijuana from 2006 to 2012, and the 'marginal' change in recreational marijuana for 2014 and 2016, the end valuation for the Gettman High Valuation Estimation Model equals to $127.868 billion in 2017, as outlined in A-12. This valuation estimate will serve as the baseline for 2017 for the aggregate total valuation of economic deadweight loss from 1972 to 2017, as outlined in A-15.

The second 'high' valuation model consists of an extension of NORML's 1997 Median Farm and Retail Value Estimates and 'a weighted-average eradication rate.' To find out the 'weighted-average eradication rate', each state's population as well as the estimated eradication rate for each. The estimated eradication rate is the rate of law enforcement agencies removing illegally grown marijuana compared to the generally estimated whole of the illegal market grown in the entire state. The aggregate of the states' population was found and the relative contribution to the total was used as well. Each state's population relative to the whole was then multiplied by the estimated eradication rate, giving a relative contribution to the 'weighted-average eradication rate.' Each state's contribution to the 'weighted-average eradication rate' was then added together to the national average of the estimated eradication. These calculations as previously described are outlined in A-13. The average of the Median Farm and Retail Values was divided by the 'weighted-average eradication rate,' to give the estimated valuation for 2017 equaling $122.395 billion, the average of the farm and retail estimates

along with the 2017 estimated valuation would serve as the 2017 base amount in the total valuation model as outlined in A-14. This valuation estimate will serve as the baseline for 2017 for the aggregate total valuation of economic deadweight loss from 1972 to 2017, as outlined in A-16.

The final high valuation estimate will include Colorado's total sales of legal marijuana for the year of 2017, then divide by the average of 'marijuana market share' and the 'US population share.' This estimate will then be deflated from 2017, to include all years from 1972 to 2017. Alicia Wallace from *The Cannabist* wrote, "[Colorado's] marijuana shops raked in $1.51 billion in sales of medical and recreational flower, edibles, and concentrate products during 2017, according to the Colorado Department of Revenue data released [earlier in 2018], collecting upward of $247 million in taxes and fess revenue from marijuana sales, according to state finance data," (Wallace, *The Cannabist,* 2018). Extrapolating from the data from Colorado's Department of Revenue, the $1.51 billion in sales from 'marijuana shops' from ninety-hundredths of a percent would amount to $162.37 billion dollars using NORML's 'marijuana market share' and its 'population share' accounting for 1.73 percent of the total population of the United States in 2017 would amount to $87.283 billion, averaging $124.827 billion dollars for the 2017 Colorado High Valuation Estimate, this estimate will serve as the base estimate for 2017 and will be deflated from 1972 to the most current year, as outlined in A-17. The totals in economic 'deadweight loss', according to the valuation methods, inflated/deflated with GDP 'growth' rates, are as follows: $2,602.3; $2,490.8; and $2,540.3 billion for the Gettman High Valuation Estimate, NORML High Valuation

Estimate, and 2017 Colorado Valuation Estimate, as outlined in Appendices15, 16, and 17 respectively.

The last portion of the costs associated with the enforcement of marijuana prohibition is the benefit of tax revenue gained from the legalization of recreational marijuana. Finding an approximate in the dollar value associated with the tax revenue will be generated in two scenarios, namely a 'high and low' estimate from states that currently have gained positive tax revenues from such legalization. For these models, the states of Colorado, Washington, and Oregon will be used to find such approximates. Using the total valuation models generated previously in this report, an average for each the high and low estimates will be used and then multiplied by each the expected or realized annual tax rate for each state. This will give three approximates for each kind of estimate in generating tax revenues. Amendment 64, Initiative 502, and Measure 91 for the states of Colorado, Washington, and Oregon legalized the recreational use of marijuana for adults over the age of 21 while appropriating funds to several public expenditures. Since 2014, Colorado and Washington have sold more than $7.612 billion dollars in legal marijuana generating $1.38 billion in tax revenue. While Oregon has followed suit for the legalization of recreational marijuana in 2016, Colorado and Washington have had four years of lining state coffers with a new source of tax revenue. According to the Colorado Department of Revenue, this excise tax has grown from, "$67.6 million in 2014 to $247.4 million in 2017, [amounting to a 266 percent increase; while] sales increased from $699.2 million to $1.51 billion, [a 116 percent increase in sales," (Colorado Department of Revenue, 2018). From 2014 to 2017, Colorado alone has sold $4.494 billion in legal marijuana generating $638.994 million in tax revenue,

making the effective tax rate attributable to all parties 14.219 percent for the state. For the state of Washington, the story is almost identical. Tax revenues for Washington have grown from, "$16 million in 2014 to $319 million in 2017, with sales expanding from $49 million in 2014 to $1.486 billion in 2017," (502Data.com, 2018). During this time period, tax revenues have increased 163 percent in three years and sales increasing 204 percent. For the state of Washington, total tax revenues have amounted to $740.7 million and sales amounting to $3.118 billion, giving the state of Washington an effective tax rate of 23.756 percent.

The reports on Oregon have been slow to come to fruition, with 2016 being the first year of recreational marijuana sales in this state. Chris Roberts of *High Times Magazine* wrote, "despite the slow start, total sales for the year were on pace to hit $200 million, or more than 60 thousand pounds worth…but only a tiny percentage of Oregon's total cannabis-growing capacity," (Roberts, *High Times Magazine*, 2017). A leaked and published post in the *Oregonian* estimates that, "the state's marijuana growers may be able to produce at least 265 thousand surplus pounds, above and beyond what is legally [allowed] to be sold in stores, with a street value of more than $5 billion," (Roberts, 2017). Oregon's *Economic and Revenue Forecast* published on May 16, 2017 lays out the revenue estimates pertaining to marijuana excise taxes in two year increments as follows, "In the years of 2015 to 2017, it is estimated that marijuana earnings will amount to $67.278 million dollars a year, $156.216 in 2017 to 2019, $212.238 in 2019 to 2021, $238.977 in 2021 to 2023, and $262.576 from 2023 to 2025," (*Oregon Economic and Revenue Forecast*, 2017). The report also expects the excise tax to amount to, "17 percent from Oregon Liquor Control Commission (OLCC), with the local option of adding up to

three additional percent," (*Oregon,* 2017). Anticipating for the increase in the excise tax and the expected 'marijuana earnings' given from the report, the annual sales for 2017 are assumed to be $395.75 million; $870.53 million in 2018; $1,130.8 million in 2019; and plateauing slightly in 2021 with annual sales expected to reach $1,241.7 million. Oregon's fate after four years of legalizing the recreational use of marijuana for adults over the age of 21 follows the precedent seen by both Colorado and Washington from 2014 to 2017. Oregon's sales are projected to grow by 213 percent in that timeframe with tax revenues expected to grow by 251 percent as well. The more expedient growth compared to Washington could be revealed in the report's statement where it exclaims, "[Oregon] had a significantly lower tax rate than Washington, which helps keep final consumer prices lower. Furthermore, the first set of quarterly tax returns…, indicates that [Oregon's] prices were very competitive with Washington's, even though Washington had two additional years to get accustomed to the newly legal market, license growers, and the like. A lower retail price… should bring more consumers and more black market conversions [into the legal market despite the excise tax put on the purchase of recreational marijuana]," (*Oregon*, 2017). The effective tax rate for the state of Oregon equals 18.389 percent assuming that from 2017 to 2021 the additional 'local option' of an added three percent tax would be gradually introduced throughout that time period evenly. From 2017 to 2021, the total tax revenue gained from Measure 91 would add $669.1 million from the sale of $3,638.8 million in recreational marijuana for adults over the age of 21.

While the effective tax rates for the purchase of recreational marijuana varies from 14.2 percent in Colorado, 18.4 percent in Oregon, and 23.8 percent in Washington,

these states have followed almost identically what this tax revenue will be allocated to fund. For example, both Colorado and Washington give 40 percent of marijuana tax revenue to the Common/ General School Fund, 20 percent to Mental Health, Alcoholism, and Drug Services, 15 percent to State Police, 10 percent to both City and County budget offices, and the remaining 5 percent to Alcohol and Drug Abuse Prevention, Intervention, and Treatment Programs. While Washington gives 32 percent to the 'General Fund', 49 percent to 'Basic Health' fund, 2 percent to cities and counties, 12 percent to 'Education and Prevention' funds, and the rest to another fund, "grants to support building bridge programs, and for Health Care Authority funding for community health centers," (*Annual Report: Fiscal Year 2017*, 2017). Four years after the legalization of recreational use of marijuana, Colorado, Washington, and Oregon have/ will have generated $760.22 million to education; $624.56 million to basic health funds; $276.4 million to city and county budgets; $196.2 million to state police funds; and $65 million to Alcohol and Drug Treatment programs. At a time when the Trump administration is, "proposing a 13 percent decline in funding to the U.S. Department of Education, with higher education programs [like the Pell Grant] comprising most of what will be sliced," (Boland, *The Hill,* 2017). He has also been quoted to *60 Minutes* to Scott Pelley, "There's many different ways [to appropriately insure e]verybody's got to be covered. This is an un-Republican thing for me to say because a lot of times they say, 'no, the lower 25 percent that can't afford private'…I am going to take care of everybody," (Rechtoris, *Becker's Hospital Review*, 2016). Those comments have been rescinded with his budget cuts including, "[The] first budget blueprint envisions a major retrenchment for the Department of Health and Human Services, calling for a nearly 18 percent cut, or $15.1

billion…[and] among the biggest targets are the National Institutes of Health, which would see their budgets cut by $5.8 to $25.9 billion," (Levey, *Los Angeles Times,* 2017). While maintaining the normalcy in the divergence of Presidential candidate and President is understandable, the time for state revenue to fund these programs could not be more imperative than now. In addition to the proposed budget cuts the Trump administration would like to be done, the Justice Department and Attorney General Jefferson Sessions' view on the legality of both medical and recreational marijuana could not be in more turmoil.

In order to find out the approximate tax revenue that could be generated for the United States as a whole, three tax rates will be used, the 'effective tax rate' as mentioned previously for each Colorado, Oregon, and Washington, multiplied both the 'low and high' aggregate valuation estimates derived from NORML, Gettman, and Colorado's extrapolation for the United States as whole. Then, for each 'effective tax rate' will be averaged together to generate a concise estimate to the tax benefit for the United States as a whole from 1972 to 2017.

The 'effective tax rates' for each Colorado, Oregon, and Washington are as follow, 14.219, 18.389, and 23.756 percent respectively. For the Low Colorado estimate, tax revenue associated with the NORML, Gettman, and the 2014 Colorado aggregate estimates are as follows $272.08 billion, $282.56 billion, $249.55 billion, averaging $268.06 billion dollars in tax dollars from 1972 to 2017. For the Low Oregon estimate, tax revenue associated with the NORML, Gettman, and the 2014 Colorado aggregate estimates are as follows $351.87 billion, $365.43 billion, $322.73 billion, averaging $346.68 billion dollars in tax dollars from 1972 to 2017. For the Low Washington

estimate, tax revenue associated with the NORML, Gettman, and the 2014 Colorado aggregate estimates are as follows $454.57 billion, $472.08 billion, $416.92 billion, averaging $447.86 billion dollars in tax dollars from 1972 to 2017. The average of the three average estimates for the low end of tax revenue associated with the legalization of the recreational use of marijuana equals $354.2 billion.

For the High Colorado estimate, tax revenue associated with the NORML, Gettman, and the 2017 Colorado aggregate estimates are as follows $354.16 billion, $370.03 billion, $361.20 billion, averaging $361.80 billion dollars in tax dollars from 1972 to 2017. For the High Oregon estimate, tax revenue associated with the NORML, Gettman, and the 2017 Colorado aggregate estimates are as follows $458.03 billion, $478.55 billion, $467.13 billion, averaging $467.90 billion dollars in tax dollars from 1972 to 2017. For the High Washington estimate, tax revenue associated with the NORML, Gettman, and the 2017 Colorado aggregate estimates are as follows $591.71 billion, $618.21 billion, $603.47 billion, averaging $604.46 billion dollars in tax dollars from 1972 to 2017. The average of the three average estimates for the high end of tax revenue associated with the legalization of the recreational use of marijuana equals $478.05 billion.

In total, the illegality has cost the United States of America and its citizens $40.11 billion associated with enforcement costs, $13.56 billion associated with the difference in fine expenditures derived from GDP growth and the Shafer Commission's 'recommendation', $1,885.24 billion derived from the average of the NORML, Gettman, and 2014 Colorado aggregate valuation models in 'economic deadweight loss', and an average of $354.20 billion in lost tax revenue. The total amount associated with the cost

of enforcing marijuana laws and not pursuing/ recommending marijuana legalization for recreational use equals $2,293.11 billion from 1972 to 2016(7) for the low estimate. For the high end estimate, the illegality has cost the United States of America and its citizens $202.32 billion associated with enforcement costs, $104.75 billion associated with the difference in fine expenditures derived from GDP growth and the Shafer Commission's 'recommendation', $2,544.47 billion derived from the average of the NORML, Gettman, and 2014 Colorado aggregate valuation models in 'economic deadweight loss', and an average of $478.05 billion in lost tax revenue. The total amount associated with the cost of enforcing marijuana laws and not pursuing/ recommending marijuana legalization for recreational use equals $3,329.59 billion from 1972 to 2016(7) for the high estimate. To put these figures in perspective, *Popular Mechanics Magazine* estimated that the hemp and marijuana, "industry amounts to over $1 billion a year, and of that, 80 percent is imported," (*Popular Mechanics*, February 1938), at a time when the United States Gross Domestic Product equaled, "$91.9 billion," ("GDP and Other NIPA Series, *United States Bureau of Economic Analysis,* 2017), meaning the [industry] could maintain about 1.088 percent of the United States economy. Additionally, if the 'industry' was inflated from 1937 on the annual GDP increases from 1937 to 2017, then the industry would be worth $185.9 billion, as outlined in A-18. Additionally, the 'high' NORML, Gettman, and Colorado valuation methods averaged a 2017 valuation of $125.03 billion, leaving the difference between the expected growth of the 'industry' and the average of these 'high' valuation methods to be the valuation of hemp, not the value of the recreational marijuana market industry. Likewise, the sum GDP from 1972 to 2017 equaled, "$395,845 billion," (St. Louis Federal Reserve, February 2018), meaning the 'low and

high' aggregate costs of enforcing marijuana laws and not pursuing/ recommending marijuana legalization for recreational use equals .6428 percent and .8411 percent, respectively, of the total summation of GDP in the United States from 1972 to 2017. Additionally, the prohibition of the possession, use, and sale of marijuana has led to the arrest of, "25.202 million Americans," (*Federal Bureau of Investigation Uniform Crime Reports 1972-2016*, 2017), from 1972 to 2015, of which 21.435 million were for possession. The total number of marijuana arrests equal 49.8 percent of the, "53.656 million drug arrests during the same time period," (*FBI Uniform Crime Reports*). The guidance of the Shafer Commission in 1972 would have lessened the increase on the total incarceration rate considering the total marijuana arrests accounts for 4.423 percent of the 569.787 million total arrests made from 1972 to 2015 (*FBI Uniform Crime Reports*).

The political climate around the federal government allowing states to dodge the implications of the Schedule I classification of marijuana and all of its derivatives is maintained by only two pieces of 'legislation,' the Cole Memorandum and the Rohrabacher-Farr [Blumenauer] Amendment. The Cole Memorandum was a document written by former US Attorney General James Cole in 2013, guiding all US Attorneys to, "focus only on the following principles related to state-legal cannabis operations:

> Preventing the distribution of marijuana to minors; preventing revenue from the sale of marijuana from going to criminal enterprises, gangs, and cartels; preventing the dispersion of marijuana from states where it is legal under state law in some form to other states; preventing state-authorized marijuana activity from being used as a cover or pretext for the trafficking of other illegal drugs or other illegal activity; preventing violence and the use of firearms in the cultivation

and distribution of marijuana; preventing drugged driving and the exacerbation of other adverse public health consequences associated with marijuana use; preventing the growing of marijuana on public lands and the attendant public safety and environmental dangers posed by marijuana production on public lands; and preventing marijuana possession or use on federal property, (Cole, *The United States Department of Justice*, 2013).

The Cole Memorandum was modeled after, "a similar memorandum issued by Deputy Attorney General David Ogden in 2009 that directing US attorneys to 'not focus federal resources in your states on individual whose actions are in clear and unambiguous compliance with existing laws providing for the medical use of marijuana,'" (Rough, *Leafly*, 2017). The Cole Memo states, "For states that have enacted laws to authorize the production, distribution, and possession of marijuana, the Department [of Justice] expects these states to establish strict regulatory schemes that protect the eight federal interests identified in the Department's guidance. These schemes must be tough in practice…and include strong, state-based enforcement efforts, backed by adequate funding. Based on assurances that those states will impose an appropriately strict regulatory system, the Department has informed the governors of states that it is deferring its right to challenge their legalization laws at this time," (Cole, *The United States Department of Justice,* 2013). The first protection in the eyes of users in compliance with state laws is the Cole Memo--, "a suggested, but not legally binding, moratorium on federal interference in state-approved recreational [marijuana]. Because the Cole Memo can be rescinded by Sessions at will, the country's ever-expanding adult-use cannabis community has been waiting for the other foot to drop since Sessions' confirmation," (Harris, *Merry Jane*,

2017). While the Cole Memo is just a guiding statement made by a previous administration's Deputy Attorney General, this position is second in power with regards to the Justice Department under only the Attorney General.

The Rohrabacher-Farr Amendment was first introduced in 2001, prohibiting the Justice Department from impeding on states' rights with regards to legalizing the use of medical marijuana. The RF Amendment has been introduced to the House floor nine times since 2001. The Amendment died in committee in 2001; did not reach a majority in 2003, 2004, 2005, 2006, 2007, or 2012; and finally gained a majority in 2014 and 2015. The Cole Memo's 'eight federal interests' and the RF Amendment's verbiage [of], "none of the funds made available in this act to the Department of Justice may be used, with respect to the [fifty states and the District of Columbia] to prevent such states from implement their own laws authorizing the use, distribution, possession, or cultivation of medical [or recreational] marijuana," (Rohrabacher-Farr[Blumenauer] Amendment, 2015). With the current Trump administration and Attorney General Jefferson Sessions, the Amendment has been in hot water as of late. For example, "on September 6 [2017], the U.S. House Committee on Rules blocked a vote on the amendment, due to Republican leadership viewing it as too divisive, but was renewed on September 8 as part of an emergency aid package, and again through a pair of stopgap spending bills on December 8 and 22, expired on January 20 [2018], but was renewed again just two days later as part of another stopgap bill, and renewed again on February 9, through March 23," (Schroyer, *Marijuana Business Daily*, 2018). The delicate safety net that those aiding in the 'use, distribution, possession, or cultivation' for either recreational users or medical patients is in constant turmoil with the Amendment only being passed as an

attempt to avoid a federal government shutdown. Millions of patients are at risk in a majority of states at an almost monthly basis. The GOP controlled House puts medical marijuana patients in a situation that could, once again, to be prosecuted by federal law. This point is exemplified by California Representative Dana Rohrabacher, "one of the originators of the amendment, reminding his Republican cohorts, 'if we bury state autonomy in order to deny patients an alternative to opioids, and ominously federalize our police, our hypocrisy will deserve the American people's contempt,'" (Adams, *Merry Jane,* 2017). The Cole Memorandum along with the Rohrabacher-Farr [Blumenauer] Amendment are the only federal protections aiding medical patients and recreational users along with those aiding in the 'production, distribution, and possession' of marijuana.

The consistently shifting acceptance of the RF Amendment and its inclusion in bills like the *Consolidated Appropriations Act, 2018*, could in fact allow the 'federalization' of police to states that allow both medical and recreational marijuana because such Act as passed to the Senate only ensures that, "none of the funds made available under this Act to the Department of Justice may be used, with respect to any of the States…, or with respect to the District of Columbia, Guam, or Puerto Rico, to prevent any of them from implementing their own laws that authorize the use, distribution, possession, or cultivation of medical [not recreational] marijuana," (*Consolidated Appropriations Act, 2018,* 115th United States Congress, March 2018). The lack of protecting States from implementing their own laws authorizing the 'use, distribution, possession, or cultivation' of recreational marijuana, stifles the tax-generating, progressive forms of legislation passed in the States of Washington, Oregon,

California, Alaska, Nevada, Colorado, Massachusetts, and Maine as well as the District of Columbia; thereby restricting, "a steadily growing number of banks [that] are willing to open accounts for marijuana businesses," (Angell, *Forbes Magazine*, January 2018). Since the inauguration of President Donald Trump and the seemingly regressive regime leading the Department of Justice when compared to the Obama administration with special regards to the Attorney Generals Loretta Lynch, Eric Holder, and James Cole, "the number of depository institutions that are actively banking the cannabis industry has increased roughly 18 percent since the beginning of 2017. [With an increase from] 340 financial services providers [in January 2017] to 400 by the end of September 2017, [an annualized increase of 24 percent]," (Angell, *Forbes Magazine).*

Since 2000, the United States heroin and non-heroin opioid death rates per 100 thousand people has increased from, ".7 to 4.1 and 2.5 to 7.6," (Planalp, *SHADAC,* June 2017)," and currently heroin and non-heroin opioids are at fault for over 50 thousand overdoses per year. Currently opioids are classified as a Schedule II drug as outlined by the Controlled Substances Act of 1970 having, "a lessened potential for abuse when compared to Schedule I drugs, currently have accepted medical treatment in the United States, and abuse of the drugs in this schedule may lead to severe psychological and physical dependency," (CSA). The likelihood of addiction to such substances is dependent on factors like the duration of which the drug is used, how the drug is ingested, and other psychological factors independent for each user. It is noted in *The Opioid Epidemic* that Research Fellow Colin Planalp notes, "repeated use of opioids can affect the chemistry and wiring in the brain, causing addiction that prompts people to crave and use opioids habitually and can cause symptoms of withdrawal if people stop using

opioids [abruptly]," (Planalp, 2017). The number of America, opioid drug fatalities should incite great concern when these numbers are put in perspective. For example, the 53 thousand deaths caused by opioids outnumbers, "the 35 thousand motor vehicle deaths in 2015, the 51 thousand AIDS-related deaths in the worst year of the crisis in 1995, and the 24.7 thousand Americans murdered in the peak year of homicides in 1991," (Welch, *CBS News,* 2017). Currently, the cause of the existing opioid epidemic stems from the expansion of Medicare Part D as noted earlier in Chapter 1, but will be covered briefly here. The NBER paper *How Increasing Medical Access to Opioids Contributes to the Opioid Epidemic* Economists Pacula, Powell, and Taylor found, "that a ten percent increase in medical opioid distribution leads to a 7.4 increase in opioid-related deaths and a 14.1 percent increase in substance abuse treatment admission rates for the Medicare-ineligible population," (Pacula, Powell, and Taylor; *NBER*, 2015). The data from their study reveals the inference that the more legal and accessible a substance becomes, the more likely the abuse of such substance will occur. The inference made by the team of the National Bureau of Economic Research extends to the marijuana market according to the research of JAMA Internal Medicine contributors Marcus Bachhuber, MD; and Brendan Saloner, PhD. In their report, *Medical Cannabis Laws and Opioid Analgesic Overdose Mortality in the US*, they found that the thirteen, "states having medical cannabis laws [prior to 2010] had a 24.8 lower mean of opioid mortality rate (95 percent confidence interval, -37.5% to -9.5%; P= .003) compared to states without medical cannabis laws," (Bachhuber, Saloner; *JAMA Internal Medicine*, 2014). If the same inference of the expansion opioid legalization through Medicare Part D can be extended to marijuana legalization and such medicinal properties of opioids like analgesia can be

achieved by using marijuana and pushes some users to use it 'recreationally' instead of either heroin or non-heroin opioids, then legalization for both medical and recreational purposes should be condoned especially when, "the association between medical cannabis laws and opioid analgesic overdose mortality in each year after implementation of the law showed that such laws were associated with a lower rate of overdose mortality that generally strengthened over time," (*JAMA Internal Medicine*, 2014). Additionally, further expansion and acceptance of the legalization of marijuana for both medical and recreational use would fund drug prevention and rehabilitation as seen with the state budgets of Colorado, Washington, and Oregon; and could be modified to further assist the states whose opioid epidemics is more exhaustive to other state funding resources.

While the focus of the *Comprehensive Drug Abuse Prevention and Control Act,* better known as the Controlled Substances Act, with regards to 'marihuana' is more generally aimed at the 'narcotic' drug; and not of marijuana's industrial use in the form of hemp. Marihuana as described in the Schedule I classification in the Controlled Substances Act, "means all parts of the plant Cannabis sativa L., whether growing or not; the seeds thereof; the resin extracted from any part of such plant; and every compound, manufacture, salt, derivative, mixture, or preparation of such plant, its seeds or resin. Such term does not include the mature stalks of such plant, fiber produced from such stalks, oil or cake made from the seeds of such plant, any other compound, manufacture, salt, derivative, mixture, or preparation of such mature stalks (except the resin extracted therefrom), fiber, oil, or cake, or the sterilized seed of such plant which is incapable of germination," (CSA, 1970). The literature does not make a distinction between marijuana, with its medical/ recreational uses, or hemp, with its industrial uses. Hemp can

best be described as, “the standard fiber of the world having great tensile strength and durability and used to produce more than 5 thousand projects, ranging from rope to fine laces, and the ‘hurds’ remaining from the fiber…can be used to produce more than 25 thousand products, ranging from dynamite to Cellophane,” (*Popular Mechanics Magazine,* 1938). This article by *Popular Mechanics Magazine* describes the economic and agrarian benefits that could be made with the innovation made from the hemp decorticator which could separate the outer fiber from the inner woody core called hurd, which contains, “seventy-seven percent cellulose,” (*Popular Mechanics Magazine*, 1938). This high percentile yield of cellulose makes it an ideal source material for biofuels, paper, fabric, and textiles. Regardless of how effective hemp ‘could have been’, “an obstacle in the march of hemp is the reluctance of farmers to try new crops [especially when] it is impossible to grow hemp without producing the blossom of [marijuana] and federal regulations being drawn requiring registration of hemp growers,” (1938). The lack of dichotomy between hemp and the ‘blossomed’ marijuana in both the Marihuana Tax Stamp Act and the Controlled Substances has hindered the, “legitimate culture of hemp and such federal regulations by [not] protecting the public, limiting the immeasurable [benefit] this new crop can add to American agriculture and industry. Patent WO2013056269A2 filed by John C. Phillips on November 13, 2012, claims, “a method of producing combustible fuel from cannabis plants which when combusted emits at least 70 percent less carbon dioxide, and between 90 and 100 percent less sulfur dioxide than traditional fossil fuels,” (Phillips, *Industrial Hemp/ Cannabis Sativa*, 2013). The ability to literally grow a domestic supply of biofuels instead of the use of oil from the Organization of Petroleum Exporting Countries (OPEC) could lessen the $71.52

billion relative trade deficit with the use of, “450 million acres of United States farmland needed to meet 70 percent of oil consumption,” (Phillips, 2013). Additionally, “until 1883, around 75 to 90 percent of all paper in the world was made with cannabis hemp fiber,” (Phillips, 2013), from a harvest that could be made four times per year instead of the multi-decades needed for tress to grow to produce an equivalent amount of wood pulp, the primary raw material used today for the production of paper. The ability for hemp fibers to be used for fabrics and textiles is another source of the encouraging future. Currently, cotton is the most widely used fabric for fiber production, and, “has enjoyed [such] top billing since 1958, with annual production projected to quadruple by the year 2050,” (“Hemp v. Cotton, *Leafly*, 2015). While cotton is prevalent for fabric and textiles, it is not the most efficient crop to hold its position. For example, “[it] accounts for less than 2.5 percent of cropland worldwide, cotton uses 16 percent of the world’s pesticides; while, hemp production, in comparison, can use similar amounts of pesticides as cotton production, requiring only half the territory as cotton to produce a ton of the finished textile,” (*Leafly,* 2015). Furthermore, while being more efficient in the use of pesticides, hemp, “uses only 3 to 5 hundred liters of water to produce a kilogram of dry hemp matter, while cotton is estimated to use 10 thousand liters to grow the same amount of material,” (2015). The difference in water usage at this moment in time is extremely crucial because aquifers like the Ogallala are being depleted quickly. A report made by “PNAS, led by David Steward of Kansas State University found that 30 percent of the Kansas portion of the Ogallala Aquifer has already been pumped out, and another 39 percent will get used up in the next [50 years] at existing rates, causing farmers would have to cut their groundwater pumping by 80 percent today – to bring depletions in line

with rainwater recharge, (Plumer, *The Washington Post,* 2013). In this chapter, I have, to the best of my ability with the evaluations available, approximated the aggregate economic costs associated with the Schedule I classification of *Cannabis sativa,* and show how the questionable classification could have addressed the growing opioid epidemic as well seek to aid in the potential federal government budget cuts associated with the current administration.

Conclusion

The Marihuana Tax Stamp Act of 1937 set a precedent for the eventual "War on Drugs" by making the claims of it being, "the most violence-causing drug in the history of mankind," (Gerber, 2004), while also, "lead[ing] to pacifism," (Anslinger, 2005). Such diverging effects cannabis has on its users might lead to some questionable motives behind the move in the legality of *Cannabis sativa*. Additionally, in the Marihuana Conference of 1938, Dr. Bromberg, Senior Psychiatrist, Department of Hospitals, New York City, adds, "*Cannabis* [*sativa*] does not bring out the motor excitement or hysterical symptoms among Anglo-Saxon users that occurs among natives [Indians]," (Marihuana Conference, 1938). Tactics made by the Federal Bureau of Narcotics made the general public more apt to believe that cannabis users typically, "Mexicans, Greeks, Turks, Filipinos, Spaniards, Latin Americans, and Negroes," (Bonnie, 1999), would commit violent criminal acts that are more typical of users of other narcotics [cocaine and heroin]. This assumption of cannabis and its effects on its users relative to harder drugs like cocaine and heroin and its effects on its users is seen with the Boggs Act introduced in 1952. The Boggs Act outlined hasher mandatory minimum sentences for cocaine, heroin, and cannabis where, "simple possession of such narcotics carry a two-year sentence," (*Tilem and Associates,* 2009). Subsequently, the Narcotics Control Act of 1956, "increased the mandatory minimums for related first-time drug offenders from two to five years and any subsequent offenses from five to ten years," (*Tilem and Associates*, 2009). The Prettyman and Katzenbach Commissions' intent was to, "develop a far broader range of alternatives for dealing with [drug] offenders- is based on the belief that,

while there are some who must be completely segregated from society, there are many instances where segregation [through incarceration] does more harm than good," (*The Challenge of Crime in a Free Society*, 1966). The goals of these Commissions was to develop a 'broader range of alternatives for dealing with offenders', were realized from a 12.3 percent decrease in the total prison population from 1964 to 1968. Shortly thereafter, the Comprehensive Drug Abuse Prevention and Control Act was passed to, "provide the legal basis for the government's war on drugs [which] consolidated [states'] laws on possessing, manufacturing, and distributing of drugs of all kinds," (Controlled Substances Act, 1970). The 'consolidation' of such laws on possessing, manufacturing, and distributing drugs would indirectly limit the hopes of developing the broader range of alternatives. The lack of developing the range of alternatives can be seen with the increase of marijuana arrests in the following year, "from 292 thousand in 1972 to 421 thousand in 1973," (FBI Uniform Crime Reports, 1972-2000), alongside the rejection of the Shafer Commission's recommendation of the, "decriminalization of possession and non-profit transfer of marijuana," (Shafer Commission, 1972). Since this rejection of what is the 'broadest' alternative to incarceration, the total number of arrests for marijuana possession from 1973 to 2016 has amounted to 25.4 million of the 52.2 million drug arrests," (FBI Uniform Crime Report, 1972-2000)

From 1937 to 2018, the legal standing of *Cannabis sativa* and all of its derivatives has been an impediment to technological, social, historical, and economic change that could greatly benefit or could have benefited millions of people, in the United States and abroad. The legalization of cannabis in states like Colorado, Washington, and Oregon have shown, despite the federal Schedule I classification of cannabis, can be a 'cash' crop

of a state and its taxation can benefit state departments of education, state police forces, and aid in the rehabilitation and treatment of addicts of more harmful substances like the ongoing opioid epidemic. The claims of the Schedule I classification have been ousted by the LaGuardia Commission in 1944 for the state of New York and the Schafer Commission in 1972 for the United States collectively. Additionally, the illegality of hemp through the propaganda of *Reefer Madness* and the Schedule I classification of *Cannabis sativa* with the Controlled Substances Act has ubiquitously usurped the opportunities the traditionally agrarian economy of the United States could have achieved since 1937. The ongoing acceptance of the use of *Cannabis sativa* and all of its derivatives with the passing of Proposition 215 in California in 1996 and the 28 other states as well as the District of Columbia as well as the 16 states that approve the use of Cannabis (CBD) oil for the use of treatment resistant epilepsy shows the perpetual flaw in the first of the three 'qualifiers' of what is necessary to be classified as a Schedule I controlled substance, namely, the 'lack of accepted medical use for treatment in the United States.' Secondly, the Shafer Commission of 1972 found that the second qualifier necessary to be considered a Schedule I controlled substance, namely, 'having a high potential for abuse' is disqualified with regards to *Cannabis sativa* and all of its derivatives by stating, "Both [of the LaGuardia and Shafer Commissions] sets of findings are strikingly similar in the three areas that have historically created public apprehension about marihuana use, namely that marihuana, in itself, is physically addictive, produces insanity, and leads to crime. Both reports [LaGuardia and Shafer Commissions] dispelled such allegations and myths," (Pike, *Marijuana,* 2014). Lastly, Henningfield and Benowitz of the National Institute on Drug Abuse found that the 'third qualifier'

necessary to be considered a Schedule I controlled substance, namely, a 'lack of accepted safety for use under medical supervision' is null because *Cannabis sativa* and all its derivatives should be regarded as safer than many if not all other controlled substances and, even, to be accepted as safe for use under, not only, medical, but also no or recreational supervision like alcohol or nicotine, with their report considering marijuana as being as safe as caffeine.

With this thesis, I have achieved the task of noting the forces incepting to the "War on Drugs" from the Marihuana Tax Stamp Act. The historic rhetoric behind the "War on Drugs" is imperative when analyzing the factors behind cannabis law reform. This analysis alludes to how governmental agencies have been wrong with regards to cannabis' legal standing. If legalized and rescheduled, cannabis could be used as a tool in researching a wide array of ailments in disease. If public need is an appropriate purpose for writing such thesis, I could not have written a more legitimate and relevant thesis than the one at hand. Rarely in American history has there been, "a phenomenon more divisive, more misunderstood, more fraught with impact on family, personal, and community relationships, [and on the criminal justice system as a whole] than the marihuana phenomenon," (*Marihuana: A Signal of Misunderstanding*, 1972). The next step for cannabis law reform is for municipalities, states, and the federal government to decriminalize the possession and non-profit transfer of *Cannabis sativa* and all its derivatives. Additionally, it would be necessary for the respective governmental agencies to initiate proceedings to not only reschedule *Cannabis sativa* and all its derivatives from Schedule I to a place outside the scope of the Controlled Substances Act similar in fashion to alcohol, nicotine, and caffeine. Finally, if such changes are made to the

standing of *Cannabis sativa*, then it would be fit that the criminal record of all cannabis offenses be expunged and dismissed and all under local, state, and federal supervision be released from incarceration, parole, or probation. *Cannabis sativa* would then be legally able to serve utility.

APPENDIX 1: On the Costs of Enforcement as Estimated from 1972 to 2016 ($ in millions) by *The War on Marijuana,* ACLU

Year	GDP Deflator	High Est.	Low Est.	Mid Est.
1972	100.00	702.80	139.32	421.02
1973	111.04	780.39	154.70	467.50
1974	120.35	845.79	167.66	506.67
1975	132.57	931.72	184.70	558.15
1976	145.52	1022.75	202.74	612.68
1977	162.81	1144.26	226.83	685.47
1978	186.36	1309.72	259.63	784.59
1979	205.01	1440.82	285.62	863.13
1980	224.73	1579.42	313.09	946.16
1981	246.51	1732.47	343.43	1037.84
1982	255.85	1798.13	356.45	1077.18
1983	284.99	2002.94	397.05	1199.87
1984	311.38	2188.41	433.82	1310.98
1985	334.33	2349.70	465.79	1407.60
1986	350.58	2463.89	488.42	1476.00
1987	377.12	2650.41	525.40	1587.74
1988	406.38	2856.08	566.17	1710.95
1989	432.72	3041.15	602.86	1821.82
1990	452.23	3178.31	630.05	1903.98
1991	471.45	3313.39	656.82	1984.90
1992	502.85	3534.06	700.57	2117.09
1993	527.99	3710.76	735.60	2222.95
1994	561.31	3944.91	782.01	2363.22
1995	585.56	4115.33	815.79	2465.31
1996	622.16	4372.54	866.78	2619.39
1997	659.80	4637.08	919.22	2777.86
1998	700.11	4920.40	975.39	2947.59
1999	745.20	5237.28	1038.20	3137.41
2000	786.18	5525.33	1095.30	3309.97
2001	803.40	5646.33	1119.29	3382.46
2002	833.61	5858.64	1161.37	3509.64
2003	887.13	6234.76	1235.93	3734.96
2004	943.10	6628.17	1313.92	3970.64
2005	1004.59	7060.33	1399.59	4229.52
2006	1056.03	7421.82	1471.25	4446.07
2007	1102.49	7748.38	1535.98	4641.70
2008	1092.35	7677.09	1521.85	4599.00
2009	1093.55	7685.54	1523.53	4604.06
2010	1143.42	8036.00	1593.00	4814.00
2011	1185.04	8328.51	1650.99	4989.23
2012	1223.43	8598.35	1704.48	5150.88
2013	1276.16	8968.94	1777.94	5372.88
2014	1331.42	9357.30	1854.92	5605.53
2015	1372.83	9648.31	1912.61	5779.86
2016	1435.43	10088.27	1999.83	6043.42
Total from 1972- 2016		202317.02	40105.90	121198.87

APPENDIX 2: A Report of Total Marijuana Arrests from 1972 to 2016($ in millions), and the Relative Fine Difference in Accordance to the Shafer Commission

Year	MJ Poss	High Cons. Est.	High Adj. Est.	Low Cons. Est.	Low Adj. Est.	Mid Cons. Est.	Mid Adj. Est.
1972	248,499	149.80	149.80	9.77	9.77	79.79	79.79
1973	357,834	243.47	239.52	19.57	15.62	131.54	127.59
1974	378,997	282.65	274.94	25.64	17.93	154.17	146.46
1975	353,952	294.39	282.86	29.98	18.45	162.21	150.68
1976	375,307	346.32	329.23	38.56	21.47	192.46	175.38
1977	395,260	412.75	387.93	50.13	25.30	231.47	206.64
1978	385,393	466.22	432.93	61.52	28.24	263.90	230.62
1979	341,864	458.38	422.48	63.46	27.56	260.95	225.05
1980	338,665	501.03	458.79	72.17	29.93	286.63	244.39
1981	344,339	562.12	511.67	83.82	33.37	323.01	272.56
1982	383,292	650.88	591.14	98.29	38.56	374.63	314.89
1983	333,346	634.34	572.67	99.02	37.35	366.72	305.05
1984	342,157	714.56	642.24	114.22	41.89	414.44	342.11
1985	365,941	823.26	737.50	133.86	48.11	478.61	392.86
1986	296,676	701.31	626.97	115.24	40.90	408.32	333.98
1987	313,092	798.51	711.75	133.19	46.43	465.90	379.14
1988	326,922	901.02	800.86	152.40	52.24	526.77	426.61
1989	314,553	925.15	820.49	158.18	53.52	541.72	437.06
1990	260,390	801.56	709.84	138.02	46.30	469.84	378.12
1991	226,240	727.00	642.96	125.98	41.94	426.53	342.50
1992	271,932	933.83	824.28	163.31	53.77	548.63	439.08
1993	310,858	1122.43	989.39	197.58	64.53	660.08	527.03
1994	402,717	1548.41	1362.63	274.66	88.88	911.63	725.86
1995	503,350	2021.12	1776.71	360.30	115.89	1190.84	946.43
1996	546,751	2336.02	2050.53	419.24	133.75	1377.78	1092.29
1997	606,519	2751.82	2412.30	496.87	157.35	1624.52	1285.00
1998	598,694	2885.95	2526.67	524.09	164.81	1705.20	1345.92
1999	630,625	3239.70	2832.82	591.65	184.78	1915.88	1509.00
2000	646,042	3504.99	3061.69	643.01	199.70	2074.22	1630.92
2001	641,109	3555.80	3104.85	653.48	202.52	2104.87	1653.91
2002	613,986	3535.72	3085.30	651.67	201.24	2093.92	1643.49
2003	662,886	4066.65	3544.87	753.00	231.22	2410.08	1888.30
2004	686,402	4480.95	3902.24	833.24	254.53	2657.38	2078.67
2005	696,074	4844.91	4215.24	904.61	274.95	2875.06	2245.40
2006	738,916	5410.21	4703.78	1013.24	306.81	3212.07	2505.64
2007	775,137	5928.54	5151.47	1113.08	336.01	3521.19	2744.12
2008	754,223	5714.82	4966.36	1072.39	323.94	3393.97	2645.51
2009	758,593	5754.34	5000.63	1079.88	326.18	3417.47	2663.77
2010	750,592	5956.70	5173.52	1120.63	337.45	3539.04	2755.86

2011	663,032	5455.77	4736.35	1028.35	308.94	3242.40	2522.99
2012	658,232	5593.89	4854.41	1056.12	316.64	3325.36	2585.87
2013	609,424	5404.95	4688.16	1022.58	305.79	3214.10	2497.32
2014	619,809	5737.76	4974.51	1087.72	324.47	3413.10	2649.85
2015	574,641	5486.85	4755.43	1041.60	310.18	3264.57	2533.15
2016	587,700	5787.89	5014.75	1100.23	327.10	3444.42	2671.29
		114454.71	95040.72	20925.53	6199.20	67697.38	53298.15
		104747.72		13562.37		60497.76	

APPENDIX 3: NORML's 1997 United States Farm and Retail Value Estimates, ($ in millions)

	Med Farm Value (mill)	Med Retail Value (mill)
Alabama	693	1154.5
Alaska	99.85	166.5
Arizona	136.5	227.5
Arkansas	661.5	1104
California	6065	10125
Colorado	183	304.5
Connecticut	27.95	46.55
Delaware	24.6	41
Florida	910.5	1520
Georgia	285	475.5
Hawaii	968.5	1615
Idaho	292.5	487.5
Illinois	383.5	638.5
Indiana	530	884.5
Iowa	55.9	93.3
Kansas	52.45	87.6
Kentucky	1775	2960
Louisiana	166.5	278
Maine	168	280.5
Maryland	48.9	81.35
Massachusetts	52.4	87.6
Michigan	201.5	335.5
Minnesota	262.5	437
Mississippi	284.5	474.5
Missouri	441	735
Montana	76.6	127.6
Nebraska	26	43.4
Nevada	21.6	36
New Hampshire	12.76	21.3
New Jersey	19.1	31.85
New Mexico	67.7	112.9
New York	364	607
North Carolina	160	267
North Dakota	7.295	12.175
Oklahoma	401.5	669.5
Oregon	215.5	359
Pennsylvania	90.3	151
Rhode Island	19.85	33.05
South Carolina	147	245.5
South Dakota	12.505	20.8
Tennessee	2355	3925
Texas	267.5	446
Utah	54.1	90.15
Vermont	57.35	95.8
Virginia	256	426.5
Washington	341.5	569.5
West Virginia	350	583
Wisconsin	153.5	256.5
Wyoming	2.55	4.255
Total	20,249	33,776

Data Gathered from norml.org State Info Crop Estimates

APPENDIX 4: The Progression of Acceptance of Medical Marijuana in the United States from 1996 to 2017

	States Introducing Legislation	Added Population in Support (millions)	States w/ Medical Cannabis Pop (millions)	Total US Population	States % US Population	% change in MJ support
1996	CA	32.02	--	269.4	11.89%	--
1997	--	--	32.02	272.6	11.75%	--
1998	AK, OR, WA	9.74	41.76	275.9	15.08%	28.40%
1999	ME	1.27	43.03	279	15.37%	1.88%
2000	CO, HI, NV	7.56	50.59	282.2	17.86%	16.25%
2001			50.59	285.3	17.67%	
2002			50.59	287.6	17.53%	
2003			50.59	290.1	17.38%	
2004	MT, VT	1.549	52.139	292.8	17.75%	2.12%
2005			52.139	295.5	17.58%	
2006	RI	1.06	53.199	298.4	17.77%	1.05%
2007	NM	1.99	55.189	301.2	18.26%	2.79%
2008	MI	9.95	65.139	304.1	21.36%	16.96%
2009			65.139	306.8	21.17%	
2010	AZ, NJ, DC	15.814	80.953	309.3	26.11%	23.32%
2011	DE	0.908	81.861	311.7	26.20%	0.34%
2012	CT, MA	10.258	92.119	314.1	29.24%	11.63%
2013	IL, NH	14.213	106.332	316.2	33.51%	14.58%
2014	MD, MN, NY	31.197	137.529	318.6	42.99%	28.28%
2015			137.529	319.93	42.81%	
2016	AR, FL, ND, OH, PA	48.816	186.345	322.18	57.56%	34.47%
2017	WV	1.82	188.165	324.46	57.72%	0.27%

APPENDIX 5: The 'NORML' Low Valuation Estimate Model, ($ in billions)

NORML Valuation 1996-2013 Med MJ Deflator

Year	Valuation		% change Med MJ
1997	$	27.013	28.40
1998	$	34.685	1.88
1999	$	35.337	16.25
2000	$	41.079	
2001	$	41.079	
2002	$	41.079	
2003	$	41.079	
2004	$	41.950	2.12
2005	$	41.950	
2006	$	42.390	1.05
2007	$	43.573	2.79
2008	$	50.963	16.96
2009	$	50.963	
2010	$	62.848	23.32
2011	$	63.061	.34
2012	$	70.395	11.63
2013	$	80.659	14.58

Average of 1997 Estimates inflated to 2013 Projected Valuation estimate: $80.659 billion and will serve as 2013 base estimate in Total Valuation Model in Appendix 7

APPENDIX 6: The 'Gettman' Low Valuation Estimate Model, ($ in billions)

Gettman Valuation 2006-2014 Med MJ Deflator

Year	Valuation	% change in Med MJ
2006	$ 35.804	
2007	$ 36.803	2.79
2008	$ 43.045	16.96
2009	$ 43.045	
2010	$ 53.083	23.32
2011	$ 53.263	.34
2012	$ 59.458	11.63
2013	$ 68.127	14.58
2014	$ 87.393	28.28

2006 Valuation Gathered from Gettman's *Marijuana Production in the United States (2006)*

2006 Estimate inflated to 2014 Projected Valuation estimate: $87.393 billion and will serve as 2014 base estimate in Total Valuation Model in Appendix 8

APPENDIX 7: NORML Low Estimate ($ in billions); Using 2013 Valuation as a Base, Inflated/ Deflated from GDP Growth from 1972 to 2017

1972	$	6.320
1973	$	7.018
1974	$	7.606
1975	$	8.379
1976	$	9.198
1977	$	10.290
1978	$	11.778
1979	$	12.957
1980	$	14.204
1981	$	15.580
1982	$	16.171
1983	$	18.013
1984	$	19.681
1985	$	21.131
1986	$	22.158
1987	$	23.836
1988	$	25.685
1989	$	27.350
1990	$	28.583
1991	$	29.798
1992	$	31.782
1993	$	33.371
1994	$	35.477
1995	$	37.010
1996	$	39.323
1997	$	41.702
1998	$	44.250
1999	$	47.100
2000	$	49.690
2001	$	50.778
2002	$	52.688
2003	$	56.070
2004	$	59.608
2005	$	63.495
2006	$	66.745
2007	$	69.682
2008	$	69.041
2009	$	69.117
2010	$	72.269
2011	$	74.899
2012	$	77.326
2013	$	80.659
2014	$	84.152
2015	$	86.769
2016	$	90.725
2017	$	94.028
	$	1,913.494

APPENDIX 8: Gettman Low Valuation Estimate ($ in billions); Using 2014 Valuation as Base, Inflated/ Deflated from GDP Growth from 1972 to 2017

1972	$	6.564
1973	$	7.289
1974	$	7.899
1975	$	8.702
1976	$	9.552
1977	$	10.687
1978	$	12.232
1979	$	13.457
1980	$	14.751
1981	$	16.181
1982	$	16.794
1983	$	18.707
1984	$	20.439
1985	$	21.945
1986	$	23.012
1987	$	24.754
1988	$	26.675
1989	$	28.403
1990	$	29.684
1991	$	30.946
1992	$	33.007
1993	$	34.657
1994	$	36.844
1995	$	38.435
1996	$	40.838
1997	$	43.308
1998	$	45.954
1999	$	48.914
2000	$	51.604
2001	$	52.734
2002	$	54.717
2003	$	58.230
2004	$	61.904
2005	$	65.940
2006	$	69.316
2007	$	72.366
2008	$	71.701
2009	$	71.780
2010	$	75.053
2011	$	77.785
2012	$	80.305
2013	$	83.766
2014	$	87.393
2015	$	90.111
2016	$	94.220
2017	$	97.650
	$	1,987.200

APPENDIX 9: 2015 Colorado Valuation Estimate ($ in billions); Using 2015 Valuation as Base, Inflated/ Deflated from GDP Growth from 1972 to 2017

1972	$	5.797
1973	$	6.437
1974	$	6.976
1975	$	7.685
1976	$	8.436
1977	$	9.438
1978	$	10.803
1979	$	11.884
1980	$	13.028
1981	$	14.290
1982	$	14.832
1983	$	16.521
1984	$	18.051
1985	$	19.381
1986	$	20.323
1987	$	21.862
1988	$	23.558
1989	$	25.085
1990	$	26.216
1991	$	27.330
1992	$	29.150
1993	$	30.608
1994	$	32.539
1995	$	33.945
1996	$	36.066
1997	$	38.248
1998	$	40.585
1999	$	43.199
2000	$	45.575
2001	$	46.573
2002	$	48.324
2003	$	51.427
2004	$	54.672
2005	$	58.236
2006	$	61.218
2007	$	63.912
2008	$	63.324
2009	$	63.393
2010	$	66.284
2011	$	68.697
2012	$	70.923
2013	$	73.979
2014	$	77.183
2015	$	79.583
2016	$	83.212
2017	$	86.241
	$	1,755.030

APPENDIX 10: The Annual Budget for the Drug Enforcement Administration from 1972 to 2016, ($ in millions)

1972	99.3
1973	110.2
1974	122.3
1975	135.7
1976	155
1977	168.2
1978	188.3
1979	193.7
1980	204
1981	216.2
1982	241.7
1983	280.5
1984	324.5
1985	353.8
1986	363.7
1987	490.2
1988	494.1
1989	534.5
1990	617.3
1991	788.9
1992	825.1
1993	853.7
1994	886.4
1995	910
1996	963.8
1997	1172
1998	1312
1999	1415.5
2000	1456.4
2001	1568
2002	1679.2
2003	1779
2004	1954.8
2005	2147.9
2006	2360.1
2007	2593.3
2008	2849.5
2009	3131.0
2010	3440.4
2011	3780.3
2012	4153.8
2013	4564.2
2014	5015.1
2015	5510.6
2016	6055.1
	68459.2

Data gathered from: *Department of Justice: Budget Trend Data*, 2002

APPENDIX 11: The Annual Change in Acceptance for Recreational Marijuana from 2012- 2017

	States Introducing Legislation	Added Pop for REC MJ (mill)	States' pop for REC MJ (mill)	Total US Pop (mill)	% change in REC MJ Support
2012	CO, WA	12.006	12.006	314.1	--
2013	--	--	--	316.2	--
2014	AL, DC	1.397	13.403	318.6	5.82
2015	--	--	--	319.9	--
2016	CA, NV, OR, MA, ME	54.48	67.882	322.2	203.23

APPENDIX 12: The Gettman High Valuation Estimate Model

	Valuation (bill)	% growth in Med MJ	% growth in Rec MJ
2006	$35.804		
2007	$35.804	2.79	
2008	$36.803	16.96	
2009	$43.045		
2010	$43.045	23.32	
2011	$53.083	0.34	
2012	$53.263	11.63	
2013	$59.458		-
2014	$59.458		-
2015	$59.458		5.82
2016	$62.918		
2017	$127.868		203.23

2006 Estimate inflate to 2017 Projected Valuation estimate: 127.868 billion and will serve as 2017 base estimate in Total Valuation Model in Appendix 15

APPENDIX 13: Calculating NORML's 1997-Weighted Average Eradication Rate

	Population (mill)	% of total	Est. 1997 Eradication Rate	Contribution to Total
Alabama	4.30	1.71	20%	0.34%
Alaska	0.60	0.24	15%	0.04%
Arizona	4.31	1.71	40%	0.68%
Arkansas	2.49	0.99	15%	0.15%
California	31.60	12.57	25%	3.14%
Colorado	3.75	1.49	25%	0.37%
Connecticut	3.27	1.30	15%	0.20%
Delaware	0.72	0.29	35%	0.10%
Florida	14.20	5.65	20%	1.13%
Georgia	7.21	2.87	25%	0.72%
Hawaii	1.18	0.47	60%	0.28%
Idaho	1.17	0.46	45%	0.21%
Illinois	11.80	4.69	5%	0.23%
Indiana	5.80	2.31	15%	0.35%
Iowa	2.84	1.13	5%	0.06%
Kansas	2.56	1.02	30%	0.31%
Kentucky	3.86	1.53	35%	0.54%
Louisiana	4.34	1.72	15%	0.26%
Maine	1.24	0.49	15%	0.07%
Maryland	5.04	2.00	20%	0.40%
Massachusetts	6.07	2.41	10%	0.24%
Michigan	9.54	3.79	20%	0.76%
Minnesota	4.62	1.84	10%	0.18%
Mississippi	2.70	1.07	10%	0.11%
Missouri	5.32	2.12	20%	0.42%
Montana	0.87	0.35	10%	0.03%
Nebraska	1.64	0.65	15%	0.10%

Nevada	1.53	0.61	5%	0.03%
New Hampshire	1.15	0.46	15%	0.07%
New Jersey	7.95	3.16	25%	0.79%
New Mexico	1.69	0.67	15%	0.10%
New York	18.20	7.24	25%	1.81%
North Carolina	7.32	2.91	40%	1.16%
North Dakota	0.64	0.26	10%	0.03%
Ohio		0.00		0.00%
Oklahoma	3.28	1.30	35%	0.46%
Oregon	3.15	1.25	30%	0.38%
Pennsylvania	12.10	4.81	15%	0.72%
Rhode Island	0.99	0.39	10%	0.04%
South Carolina	3.67	1.46	15%	0.22%
South Dakota	0.73	0.29	5%	0.01%
Tennessee	5.25	2.09	50%	1.04%
Texas	18.80	7.48	35%	2.62%
Utah	1.96	0.78	5%	0.04%
Vermont	0.59	0.23	15%	0.03%
Virginia	6.62	2.63	15%	0.39%
Washington	5.45	2.17	15%	0.32%
West Virginia	1.83	0.73	25%	0.18%
Wisconsin	5.12	2.04	10%	0.20%
Wyoming	0.48	0.19%	5%	0.01%
	251.54			22.07%

Data Gathered from norml.org's State Crop Estimates

APPENDIX 14: NORML's High Valuation Estimate Model with Weighted Average Eradication Rate

	1997 Median Farm Value ($ billions)	1997 Median Retail Value ($ billions)
	20.249	33.776
Average	27.013	
Weighted Average ER	22.07%	
Estimated Valuation	122.395	

The Average1997 Median Estimates inflated to 2017 Projection: $122.395 billion and will serve as 2017 base amount in Total Valuation Model in Appendix 16

APPENDIX 15: Aggregate Gettman High Model ($ in billions); Using Average as 2017 Base, Inflated/ Deflated from GDP Growth from 1972 to 2017

1972	$	8.596
1973	$	9.545
1974	$	10.345
1975	$	11.396
1976	$	12.509
1977	$	13.995
1978	$	16.019
1979	$	17.622
1980	$	19.317
1981	$	21.189
1982	$	21.992
1983	$	24.497
1984	$	26.766
1985	$	28.738
1986	$	30.135
1987	$	32.416
1988	$	34.932
1989	$	37.195
1990	$	38.873
1991	$	40.525
1992	$	43.224
1993	$	45.385
1994	$	48.249
1995	$	50.333
1996	$	53.479
1997	$	56.715
1998	$	60.180
1999	$	64.056
2000	$	67.579
2001	$	69.059
2002	$	71.655
2003	$	76.256
2004	$	81.067
2005	$	86.353
2006	$	90.774
2007	$	94.768
2008	$	93.896
2009	$	94.000
2010	$	98.286
2011	$	101.864
2012	$	105.164
2013	$	109.697
2014	$	114.446
2015	$	118.006
2016	$	123.387
2017	$	127.868
	$	2,602.348

APPENDIX 16: Aggregate NORML High Model ($ in billions); Using Average as 2017 Base, Inflated/ Deflated from GDP Growth from 1972 to 2017

1972	$	8.227
1973	$	9.136
1974	$	9.901
1975	$	10.907
1976	$	11.973
1977	$	13.395
1978	$	15.332
1979	$	16.867
1980	$	18.489
1981	$	20.281
1982	$	21.049
1983	$	23.447
1984	$	25.618
1985	$	27.506
1986	$	28.843
1987	$	31.026
1988	$	33.434
1989	$	35.601
1990	$	37.206
1991	$	38.787
1992	$	41.371
1993	$	43.439
1994	$	46.180
1995	$	48.175
1996	$	51.186
1997	$	54.283
1998	$	57.600
1999	$	61.309
2000	$	64.681
2001	$	66.098
2002	$	68.583
2003	$	72.986
2004	$	77.591
2005	$	82.650
2006	$	86.882
2007	$	90.705
2008	$	89.870
2009	$	89.969
2010	$	94.072
2011	$	97.496
2012	$	100.655
2013	$	104.993
2014	$	109.539
2015	$	112.946
2016	$	118.096
2017	$	122.395
	$	2,490.777

APPENDIX 17: Aggregate Colorado High Model ($ in billions); Using Average as 2017 Base, Deflated from GDP Growth from 1972 to 2017

1972	$ 8.391
1973	$ 9.317
1974	$ 10.098
1975	$ 11.124
1976	$ 12.211
1977	$ 13.661
1978	$ 15.637
1979	$ 17.202
1980	$ 18.857
1981	$ 20.684
1982	$ 21.468
1983	$ 23.913
1984	$ 26.127
1985	$ 28.053
1986	$ 29.416
1987	$ 31.643
1988	$ 34.099
1989	$ 36.308
1990	$ 37.946
1991	$ 39.558
1992	$ 42.193
1993	$ 44.302
1994	$ 47.098
1995	$ 49.133
1996	$ 52.203
1997	$ 55.362
1998	$ 58.744
1999	$ 62.527
2000	$ 65.966
2001	$ 67.411
2002	$ 69.946
2003	$ 74.436
2004	$ 79.133
2005	$ 84.293
2006	$ 88.608
2007	$ 92.507
2008	$ 91.656
2009	$ 91.757
2010	$ 95.941
2011	$ 99.433
2012	$ 102.655
2013	$ 107.079
2014	$ 111.716
2015	$ 115.190
2016	$ 120.443
2017	$ 124.827
	$ 2,540.270

APPENDIX 18: Aggregate Hemp/ Marijuana Valuation ($ in billions); Using 1937 as base; Inflated from GDP Growth to from 1937 to 2017

1937	$1.0000
1938	$1.2499
1939	$1.5489
1940	$1.8492
1941	$2.4726
1942	$4.0652
1943	$7.2445
1944	$12.8134
1945	$19.0688
1946	$21.1035
1947	$21.1014
1948	$21.9032
1949	$21.5747
1950	$24.4657
1951	$25.8089
1952	$27.1896
1953	$27.3337
1954	$28.0827
1955	$29.9277
1956	$30.5233
1957	$30.6332
1958	$31.4511
1959	$32.8789
1960	$33.1617
1961	$35.2741
1962	$36.7838
1963	$38.6892
1964	$40.6817
1965	$44.1315
1966	$46.1219
1967	$47.3672
1968	$49.7213
1969	$50.7505
1970	$50.6744
1971	$52.8939
1972	$56.5225
1973	$58.7947
1974	$57.6599
1975	$59.1360
1976	$61.6966
1977	$64.7691

1978	$69.0957
1979	$69.9939
1980	$69.9659
1981	$70.8685
1982	$69.8763
1983	$75.3477
1984	$79.5897
1985	$82.9962
1986	$85.4363
1987	$89.2382
1988	$92.6649
1989	$95.2410
1990	$95.8601
1991	$97.0296
1992	$101.2309
1993	$103.8933
1994	$108.1841
1995	$110.6507
1996	$115.5747
1997	$120.6484
1998	$126.6808
1999	$132.6221
2000	$136.4549
2001	$136.7415
2002	$139.5310
2003	$145.6146
2004	$150.1577
2005	$154.7075
2006	$158.4050
2007	$161.3989
2008	$156.9281
2009	$156.5515
2010	$160.8254
2011	$163.5272
2012	$165.6204
2013	$170.0259
2014	$174.6166
2015	$178.1438
2016	$181.4217
2017	$185.9391

Data derived from FRED.stlouisfed.org and Popular Mechanics, *Next Billion Dollar Crop*

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