TESTIMONY OF Derek Rosenzweig
BEFORE THE PENNSYLVANIA HOUSE OF REPRESENTATIVES
COMMITTEE ON HEALTH AND HUMAN SERVICES
ON HB 1393 COMPASSIONATE USE ACT OF 2009

Chairmen Oliver and Baker, members of the Committee, hello and thank you for the opportunity to be heard regarding the Pennsylvania House's decision to repeal the prohibition of marijuana as medicine in the Commonwealth. My name is Derek Rosenzweig, and I am a 26 year old Software Engineer from Philadelphia. I am also the Secretary (previously Co-Chairman) of the Board of Directors of the Philadelphia chapter of the National Organization for the Reform of Marijuana Laws. In 2005 I - along with an activist and AIDS patient named Barry Busch - helped found Pennsylvanians for Medical Marijuana, a statewide advocacy group. These two groups are primarily responsible for raising support for, and getting introduced, the Compassionate Use Medical Marijuana Act of 2009, or HB 1393.

As a lifelong resident of Pennsylvania, it is easy for me to appreciate its very unique history. The Declaration of Independence and US Constitution were both written here in Philadelphia, and on hemp [marijuana] paper originally, no less. Philadelphia used to be the capitol of the entire nation, Lancaster county used to grow more hemp than any other county in the Union, Pennsylvania was the first state to refuse to return runaway slaves back to their 'owners' in southern states, and Pennsylvania was the first state to break from the first Prohibition of alcohol which the entire New England region enacted in the late 19th century. Currently, 13 states already have a medical marijuana program. Pennsylvania is behind the times, but it does give us the opportunity to learn from the other states. HB 1393 is our attempt to make the best medical marijuana program possible – one that's overseen by the Commonwealth but not run by it.

I believe that within the next five years, the Federal government will repeal the failed prohibition of marijuana completely. I believe that it will be replaced with a system of regulation similar to alcohol. The debate for *taxation and regulation* is taking place nationwide, and many see it as the only viable replacement system for the failure of prohibition. In California, voters will have the opportunity to vote for two (2) such proposals during the November 2010 elections, which could net their budget $1 billion per year. In total there are three (3) separate proposals happening in California *right now*: the two ballot initiatives, and AB 390, the Marijuana Control, Regulation, and Education Act. Massachusetts' Legislature is also debating the same issue, and in fact just had a hearing in the joint Committee of Finance in October. Pennsylvania is behind the times.

I wish we were discussing a tax and regulate system right now, because its benefits to society are even greater than simply allowing the sick and dying to grow and possess it. Under our current system of prohibition, we give up the right to these benefits: taxing store-front sales (to the tune of ***billions*** of dollars per year); ensuring that product sold is labeled for quality, strain, grow method, and THC/CBD content; keeping the price at something reasonable; ensuring that only adults are able to purchase it, and vendors who violate this are fined ridiculous amounts of money like they are now for both alcohol and tobacco; and removing it as a source of income for violent cartels both domestic and foreign. Other benefits include keeping otherwise non-violent marijuana 'offenders' out of jail; keeping our police focused on stopping murderers, rapists, thieves, and bad drivers; keeping our criminal justice system free and clear of frivolous marijuana possession-only charges (which make up 89% of all marijuana arrests, both in PA and nationwide); providing a safer alternative for enjoyable recreation, mind expansion, and socialization than alcohol; allowing farmers throughout the country two new separate crops to cultivate – Cannabis sativa, and it's non-psychoactive counterpart hemp (which can be used in over 25,000 products); and allowing doctors to freely recommend this herb - which has been a part of human medicine

since before the word for medicine existed - to their patients when they decide that it's in the patient's best interest. Keep in mind that over a hundred million people across the nation have tried marijuana at least once, and that the US government estimates 14.6 million people smoke it regularly. Clearly, there is already a huge demand for marijuana, a largely met supply, and all of this in *spite* of *prohibition*, not because of it.

Patients here in Pennsylvania, however, do not have the luxury of waiting for the complete repeal of marijuana prohibition – they need their medicine now, and they need protection from the law, now. While we as a nation discuss the end of marijuana prohibition, let's at least ensure that those who really need marijuana as medicine can get it legally and without fear of arrest. If there is one thing that scientists, lawyers, police, doctors, patients, politicians, hippies, and the US public can agree on, it is that **marijuana is medicine**, but **jail is not**.

About Marijuana

Marijuana, or cannabis, is a plant that produces cannabinoids such as Δ9 tetra-hydrocannabinol (THC), cannabiniol (CBN) and cannabidiol (CBD). People use marijuana by smoking, vaporizing, or cooking it into food and drink in its variously processed forms. These include simply the buds (the dried, cured flowers of the *female* plant); the processed buds and leaves which can make pressed hashish, loose kief, hash oil, and other tinctures. Humans have used marijuana for religious, industrial, cultural, social, medical, and recreational purposes for over 5,000 years.

Cannabis acts upon the human body using a system known as the endocannabinoid system. Just like the human body contains opiate receptors, it also contains receptors which the various cannabinoids in marijuana bind (attach) to, either activating it or blocking it. Cannabinoids are the chemicals in marijuana which mimic the function of chemicals that our bodies produce normally. THC, which is an analogue of Anandamide, is the only psychoactive ingredient in any quantity to have a direct effect. CBN and CBD are non-psychoactive, but they do play large roles.

What's important to note is where the receptors for these cannabinoids reside in our bodies - in the brain, they exist in the cerebral cortex, the hippocampus, the cerebellum, and the Basal ganglia. These areas, respectively, control: memory, pain, perception, higher thinking and emotions; memory; movement; co-ordination. The receptors also reside in our immune system, pituitary gland, thyroid gland, gastrointestinal system, fat cells, muscle cells, liver cells, the lungs and kidneys. [1 and 2]

There is no record in the extensive medical literature describing a proven, documented cannabis-induced fatality. [5] The same can definitely *not* be said for any other drug prescribed by doctors or even found over the counter, including aspirin, Tylenol, and cough medicine - all of which also have legitimate medical uses. It's literally impossible to overdose on marijuana. In fact, there is no known LD-50 in humans for marijuana (LD-50 is a term describing the median lethal dose of a given substance, or how much of a substance will kill 50% of a given population).

In 1988, the DEA responded to a petition to remove marijuana from Schedule 1 and place it into Schedule 2, whereby definition it has "medical value". DEA Administrative Law Judge Francis Young concluded in his landmark ruling:

> "At present it is estimated that marijuana's LD-50 is around 1:20,000 or 1:40,000. In layman terms this means that in order to induce death a marijuana smoker would have to consume 20,000 - 40,000 times as much marijuana as is contained in one marijuana cigarette. NIDA-supplied marijuana cigarettes weigh approximately .9

> grams. A smoker would theoretically have to consume nearly 1,500 pounds of marijuana within about fifteen minutes to induce a lethal response. [10]"

A typical medical marijuana user consumes an average of 5.6 - 7.23 pounds of marijuana per year [3] (0.25 – 0.32 oz/day), well under anything resembling a lethal dose. Given that we know what parts of the brain and body the cannabinoids affect, it's easy to conclude that marijuana is a safe and effective medicine. Judge Young concluded in the same report that:

> "... [Marijuana] has a currently accepted medical use in treatment in the United States for spasticity resulting from multiple sclerosis and other causes. It would be unreasonable, arbitrary and capricious to find otherwise. [5]"

Unfortunately, this ruling was not binding, and marijuana was not re-scheduled as Judge Young ruled. It was this ruling that forced activists and patients to go the route of state-sanctioned medical marijuana laws, either through ballot initiative or legislative action. Starting with California in 1996, we now have 13 states currently running medical marijuana programs, six (6) states with medical marijuana bills that are still alive (including HB1393 here in PA), and four (4) states which held votes to expand their medical marijuana programs. [4]

Over 25 million Americans now live in a state where marijuana is available to them as medicine. Something we all can agree on is that we do not want our children/teenagers using drugs unless prescribed/recommended by their physician. Advocates of prohibiting marijuana's use as medicine frequently bring up arguments meant to scare you, such as "legalizing marijuana for medical use sends the wrong message to children," or "legalizing medical marijuana will make marijuana more available to children." Let us clear one thing up - children and teenagers do not look at the sick and debilitated patients using medical marijuana and think, "Gee, I want to be like that!" According to a report compiled by the Marijuana Policy Project - and updated in June 2008 - ***marijuana use by teenagers has gone down in every state which has instituted a medical marijuana law***.[7] All states have reported overall decreases - exceeding 50% in some age groups. MPP's report is included with this testimony for your consideration. It's pretty clear that medical marijuana laws do not increase teen marijuana use – they *decrease* it. Marijuana use becomes de-glamorized in the eyes of young people because of its new context.

We've established that marijuana is a safe and effective medicine; however, the FDA has not approved it for medical use and it remains in Schedule 1 of the Controlled Substances Act. The FDA did start the process of allowing marijuana to gain approval by allowing certain patients to use it through their Investigational New Drug program, wherein the FDA has 30 days to review. Once patients realized they could get their needs met through the program, they stopped allowing applications while grandfathering in the patients who made the deadline. Seventeen (17) patients originally were in the program; currently, 4 patients are still alive. [3] Each of these patients receives a can of roughly 300 pre-rolled joints per month, all grown by the Federal government at the University of Mississippi. Clearly the Federal government whether they publicly acknowledge it or not, knows that marijuana has medical value and has known for some time.

In addition, since 1992 a synthetic version of THC called Dronabinol (a.k.a. "Marinol") has been available as medicine, approved by the FDA, as an anti-emetic and appetite stimulant for patients undergoing cancer chemotherapy or suffering from AIDS. Marinol is 100% THC; it contains no other cannabinoids; however, the Institute of Medicine found, it is not as effective as whole-plant inhaled cannabis. "It is well recognized that Marinol's oral route of administration hampers its effectiveness because of slow absorption and patients' desire for more control over dosing. ... In contrast, inhaled marijuana is rapidly absorbed." [6]

In 1996, after California passed Proposition 215, the Clinton Administration commissioned the National Academy of Sciences' Institute of Medicine to report on medical marijuana. In 1999 they released their report, entitled "Marijuana and Medicine - Assessing the Science Base." [6] In that report, they came to the conclusion that marijuana has significant potential as medicine on a number of ailments, that "except for the harms associated with smoking, the adverse effects of marijuana use are within the range of effects tolerated for other medications," and that "the short-term immunosuppressive effects are not well established but, if they exist, are not likely great enough to preclude a legitimate medical use." The report also concluded that,

> "Scientific data indicate the potential therapeutic value of cannabinoid drugs, primarily THC, for pain relief, control of nausea and vomiting, and appetite stimulation; smoked marijuana, however, is a crude THC delivery system... ... Because of the health risks associated with smoking, smoked marijuana should generally not be recommended for long-term medical use. Nonetheless, for certain patients, such as the terminally ill or those with debilitating symptoms, the long-term risks are not of great concern. Further, despite the legal, social, and health problems associated with smoking marijuana, it is widely used by certain patient groups." [6]

President Clinton's administration unfortunately did not act on this report, and marijuana has remained Schedule 1 to this day. Research continues, including lines recommended by the IoM report.

With the advent of vaporization, the problems associated with smoking vanish. In comparison with smoking, vaporization offers a number of advantages. Most important is the lack of combustion gases such as carbon monoxide. Just as important is the fact that it is just as effective as smoking. According to a study conducted by Dr. Donald Abrams,

> "Vaporization of marijuana does not result in exposure to combustion gases, and therefore is expected to be much safer than smoking marijuana cigarettes. The vaporizer was well tolerated and preferred by most subjects compared to marijuana cigarettes. The Volcano's device is an effective and apparently safe vehicle for THC delivery, and warrants further investigation in clinical trials of cannabis for medicinal purposes." [9]

In addition, just as with smoking, patients are able to control their dose via titration, stopping once they feel the desired effect. This ability to directly control how much of an effect you want is something that pill medications - such as Marinol - sorely lack.

Amendment to HB 1393

House Bill 1393 is a great bill, but it does have a few flaws which I have noticed or which members of our organizations have brought up. Currently, HB 1393 allows patients and caregivers to be in possession of up to 6 plants and 1 ounce of usable marijuana. These numbers are arbitrary and are not a useful measure. According to data from the DOJ/DEA, a yearly average dose of marijuana is 5.6 - 7.23 pounds of marijuana. [3] That equates to consumption of 7.47 - 9.64 ounces per month. The 6 plant limit doesn't specify whether it is a clone (cutting), vegetating plant (not yet started to bud), a mother plant (vegetating plant that you take clones from every so often, never flowers), or flowering plant. It also does not specify gender. As only female marijuana plants produce usable marijuana, the 6 plant limit is not enough.

The cultivation of marijuana is a highly complex subject when one strives to do it correctly. We cannot expect police to understand the intricacies of a grow op; however, we do need to be able to expect that they can determine if a grow op falls under state law. Because of the myriad

ways of growing cannabis, a person could harvest as little as 1/4oz per plant, up to 1lb per plant. Patients and caregivers are not always able to use one method over another, for reason such as plant genetics, environmental factors, space limitations, etc. More importantly, if they happen to need more plants than are allowed to harvest the amount of marijuana they need for their condition, they could be opening themselves up to legal penalty. It's the same if they misjudge a harvest and get more than they thought they would. A 6 plants and 1 oz usable material limit is not nearly enough.

If we are to create a realistic, successful medical marijuana program that avoids the mistakes of other states, we must be smart about it. Chris Conrad (director of Safe Access Now, author of Hemp: Lifeline to the Future and Hemp for Health, and curator of the Hash-Marijuana-Hemp Museum in Amsterdam) has come up with an excellent set up that both gives patients and caregivers a large margin of possession and gives law enforcement a deceivingly simple method for determining if a complex grow operation falls under state law. Instead of a single, static plant limit, we recommend using *canopy size to predict yield*.

A fully flowered marijuana sensimilla (seedless) plant, on average, yields only 28% usable marijuana (buds) - the rest is low potency leaf, stem, and branch waste. Factors such as indoor vs outdoor grow op, the strain's flowering period and sensitivity to environment, pests, and others all affect the final yield.

> "The US Drug Enforcement Administration (DEA) conducted scientific research with the National Institute on Drug Abuse (NIDA) at the University of Mississippi, published in the 1992 DOJ report, Cannabis Yields. Both seeded and sinsemilla plants of several seed varieties were measured. The NIDA data in Table 3 includes leaf with the bud, and therefore requires an additional adjustment to arrive at the true garden yield below. Canopy is a term used in agriculture to describe the foliage of growing plants. The area shaded by foliage is called the canopy cover. The data on this page are based on the higher yielding, more potent seedless buds, sinsemilla. The federal field data show that, on average, each square foot of mature, female outdoor canopy yields less than a half-ounce of dried and manicured bud (Table 4), consistent with growers' reports and gardens that have been seized by police as evidence and I have later weighed and examined. All other things being equal, a large garden will always yield more than a small one, no matter how many plants it contains. This is true for skilled and unskilled gardener alike. ***Restricting canopy will therefore limit any garden's total bud yield, no matter which growing technique is used or how many plants make up the combined canopy cover. Most patients can meet their medical need with 100 square feet of garden canopy***." [3]

Therefore, since on average patients smoke 6.63 pounds per year, we recommend that patients and caregivers be given a 6 pound possession limit. We recommend that we use a canopy area limit of 100 ft^2 instead of 6 plants. By using canopy area instead of a single, static plant limit, all law enforcement has to know is how to use a tape measure to determine if a grow op falls within state law. More detailed information on how these numbers were achieved can be found in Chris Conrad's publication "Cannabis Yields and Dosage - A Guide to the Production and Use of Medical Marijuana" [3], which is included with this testimony.

Personal Reasons

I personally know, in my family alone, at least three people who could receive benefit from medical marijuana. For instance, my grandmother of 83 years has rheumatoid arthritis in her knees and knows that medical marijuana is effective at easing her aches and pains. More telling,

and more heartbreakingly, is my father. He was diagnosed with Reflex Sympathetic Dystrophy, aka Complex Regional Pain Syndrome, in 2003.

RSD is an ailment characterized by, severe burning pain, pathological changes in bone and skin, excessive sweating, tissue swelling and extreme sensitivity to touch. [11] This leaves him in almost endless and random pain. Neurological signals get crossed, and regular touch can feel like agonizing, burning pain. He's been prescribed every painkilling narcotic under the sun, going so far as to undergo a 5 day, experimental Ketamine drip treatment at Cooper hospital in Camden. This treatment required a year to work through the red tape to get approval, including requiring trying other treatments first, and even this did not work as hoped.

My father has not been able to leave the house and visit me since 2004, because the drive affects his condition too much. He can't get out to the movies, family functions and holidays that take place at relatives' houses, or do any of the things that he used to enjoy like have a baseball catch, or go snow tubing. The narcotics he's still on prescribed now – Opana 40mg, oxycodone 5mg, and valium 5mg - leave him extremely tired, constipated, and loopy, and create problems of their own.

He has one of the *worst* cases of RSD known to his doctors. His history of treatment includes the following:

- 4/02 and 5/02, physical therapy;
- 6/02 and 7/02, cervical epidurals;
- 12/02, acupuncture;
- 1/03, nerve root injection. 4/03, carpal tunnel injection;
- 7/22/03, 7/29/03, sympathetic nerve block;
- 8/03, stellate ganglion block;
- 10/03, quantitative sensory testing;
- 11/03 inpatient stay intrapleural catheter with bupivacaine - 3 days;
- 2/04, IV with lidocaine in hickman catheter - 4 days;
- 5/05, inpatient stay 4 days, IV with ketamine. (very bad experience!) All other procedures did not help at all!
- 5/06, psychological help and biofeedback.

At many points during his treatment, it was at times impossible for him to hold a conversation with me or my family without these horrible pharmaceuticals affecting his memory, speech, and ability to stay awake. His history of prescribed medicines includes the following:

- Pamelor 10mg, did not help;
- Neurontin 300mg, made him spaced out;
- Percodan 5/325, then Percocet 5/325, made him tired and constipated and only helped a little;
- Paxil 10mg, didn't help;
- Fentanyl patch, didn't work, caused allergic reaction;
- Oxycontin 10mg larger dose caused reaction;
- Ultram 50 mg no help;
- Pamelor 10mg and neurontin 300 mg at same time, really made him spaced out;
- Colace for constipation;
- MS Contin (morphine) 15mg, larger dose caused reaction;
- Zanaflex 4mg, made him very tired;
- Lexapro for depression, didn't help;
- Oxycodone 5mg - am still on, this one helps with pain some, causes constipation;
- Valium 5mg. and miralax for constipation, still on;

- Wellbutrin and Zoloft for depression didn't help;
- Lyrica 50 mg made him tired;
- MS Contin (morphine) 15mg then switched to Opana 40mg

I find it incredibly hard to believe that marijuana should be prohibited when all these other medicines did almost nothing good! When I did some research, I found that marijuana could seriously raise his quality of life. After trying it a few times in various forms, he noted that it does help him. Other RSD patients I've spoken with have even been able to wean off of the heavier narcotics after using medical marijuana as part of their regular regimen. My father, on the other hand, **doesn't want to break the law and risk going to jail**. Jail is simply not an option for someone in his condition. He refuses to use medical marijuana as part of his medical regimen until it's legalized, even though it could significantly raise his quality of life now. He doesn't want his family members to risk breaking the law to help him either, not with the insane penalties associated with possessing marijuana under prohibition. Worse yet, if he were to use medical marijuana anyway, he could lose access to his pain management doctor if he were to test positive on a drug test. Insurance companies and the doctors who work with them don't cover people who use marijuana, even if they use it as medicine. It's a catch-22 that is simply unacceptable.

As a son who loves his father, and a citizen of the state, it's my duty to see that he gets the opportunity to use medical marijuana without the threat of jail time. It's a simple thing to ask. As I said earlier, my dad is not the only family member or friend of mine who can benefit from medical marijuana, but he is the most telling example. HB 1393 presents a chance that he can start to regain some of his quality of life that he's lost, while ceasing use of more harmful narcotics. Please give him this opportunity!

Marijuana is medicine, but jail is not. Let us put Pennsylvania ahead of the curve. You are the only ones who can do it, and this is your opportunity. I urge you to vote "YES" on HB 1393. Thank you so much for reading this, and thank you for the opportunity to be heard.

Sincerely,

Dated: 11 / 30/2009

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References:

(1) "Cannabinoid receptor 2 (macrophage) - Wikipedia, the free encyclopedia." http://en.wikipedia.org/wiki/CB2_receptor (Accessed November 30, 2009).

(2) "Cannabinoid receptor type 1 - Wikipedia, the free encyclopedia." http://en.wikipedia.org/wiki/Cannabinoid_receptor_type_1 (Accessed November 30, 2009).

(3) "cannabisyieldsdosage-rgb.pdf (application/pdf Object)." http://www.safeaccessnow.net/pdf/cannabisyieldsdosage-rgb.pdf (Accessed November 30, 2009).

(4) "Feature: Medical Marijuana in State Legislatures -- The Good, the Bad, and the Ugly | Stop the Drug War (DRCNet)." http://stopthedrugwar.org/chronicle/609/medical_marijuana_state_legislatures (Accessed November 30, 2009).

(5) "Judge Young - Part 4." http://www.druglibrary.org/schaffer/Library/studies/YOUNG/young4.html (Accessed November 29, 2009).

(6) "Marijuana and Medicine: Assessing the Science Base." http://www.nap.edu/openbook.php?record_id=6376 (Accessed November 30, 2009).

(7) "TeenUseReport_0608.pdf (application/pdf Object)." http://www.mpp.org/assets/pdfs/general/TeenUseReport_0608.pdf (Accessed November 30, 2009).

(8) "The FDA Approval Process." http://people.musc.edu/~cooperjc/FDAapproval.htm (Accessed November 30, 2009).

(9) "vaporizer_epub.pdf (application/pdf Object)." http://www.maps.org/media/vaporizer_epub.pdf (Accessed November 30, 2009).

(10) "What is the lethal dose of marijuana?." http://www.druglibrary.org/SCHAFFER/LIBRARY/mj_overdose.htm (Accessed November 29, 2009).

(11) "RSDSA:: What is CRPS?." http://www.rsds.org/2/what_is_rsd_crps/index.html (Accessed November 30, 2009).