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UNITED STATES DISTRICT COURT

EASTERN DISTRICT OF CALIFORNIA

UNITED STATES OF AMERICA, Plaintiff, v. BRIAN PICKARD, Defendant.	Case No. 2:11-CR-00449-KJM-16 DIRECT EXAMINATION OF PHILIP A. DENNEY, M.D.

I, PHILIP A. DENNEY, M.D. declare as follows:

I am a physician licensed to practice medicine in the State of California since 1977. I attended medical school at the University of Southern California after serving in the United States Navy. Since graduation I have practiced Family, Emergency and Occupational Medicine. I have never been disciplined by the Medical Board, nor have my hospital privileges been revoked, suspended or restricted. I have been involved in the emerging field of cannabis medicine since 1999, and have practiced in Loomis, Redding, Lake Forrest, Oakland and Sacramento, California. I retired from active practice in 2010, but have continued to study the developments in medical cannabis scientific/medical research.

I have qualified to testify as an expert witness regarding the medical use of cannabis in at least 21 counties throughout California, and have also testified before the California Medical Board regarding medicinal cannabis. I am a founding member of the Society of Cannabis Clinicians. I have been active in the development of policy regarding cannabis as medicine in El

Dorado County, and in this regard have been asked to consult with Judges, District Attorneys, and law enforcement officers about the medical use of cannabis. I also testified before the Arkansas State Legislature regarding the implementation of cannabis as medicine laws and policies, and have been consulted by members of the campaign to legalize the medical use of cannabis in the state of Montana.

While cannabis is considered a Schedule I Controlled Substance under the federal law, the overwhelming majority of current medical research contradicts such a classification. A Schedule I "Controlled Substance" is defined in *21 U.S.C. section 812(b)(1)* as follows:

(A) The drug or other substance has a high potential for abuse;

(B) The drug or other substance has no currently accepted medical use in treatment in the United States;

(C) There is a lack of accepted safety for use of the drug or other substance under medical supervision.

For the reasons provided in this declaration, and those which may be presented at hearing, it is my professional medical opinion that cannabis has a low potential for abuse, is currently accepted and used medically to treat multiple serious medical conditions, and has been safely used under medical supervision for nearly sixteen years in the State of California and elsewhere. Moreover, the safety and medical efficacy of cannabis far exceeds that of many other prescribed and over-the-counter (OTC) medications, in that it is less toxic, possesses a low abuse potential, and is incapable of causing lethal overdose.

Based on my training, experience, and review of pertinent human-subject clinical trials and other research conducted in accord with accepted principles and methodologies,[1] I have formed the opinion that cannabis fails to meet the criteria for inclusion in Schedule I of the Controlled Substances Act.

I attest to the following in support of this opinion:

[1] Attached hereto, and incorporated by reference, is an Addendum which highlights those studies which I believe are most significant to the issue before this Court, and therefore, exclude pre-clinical trials, animal studies and anecdotal evidence.

Cannabis and Potential for Abuse

1. In determining whether a substance has a high potential for abuse, a physician assesses both the physical and psychological effect of the drug. It is my opinion that cannabis has minimal potential for physical abuse, and low potential for psychological abuse.

2. Cannabis is a non-toxic, non-lethal substance. There have been *no* confirmed deaths resulting from an overdose of marijuana and, in fact, based on the physiological properties of the plant, an overdose would be, as a practical matter, impossible.

3. Many over-the-counter medications pose inherent health risks, and some are toxic even when used as recommended. As detailed, *infra*, adverse effects and/or overdoses can result in permanent major organ failure and death.

4. Unlike many drugs, including some over-the-counter (OTC) medications, cannabis has a notably low abuse potential, and cessation causes minimal physiological symptoms of withdrawal.

5. While some studies have identified an association between cannabis use and psychosis, none have identified a causal relationship between cannabis use and mental illness in otherwise healthy individuals not already predisposed to these conditions. The association between marijuana use and mental illness is most likely not one of causation, but rather reflects the tendency of those in psychological distress to self-medicate, and the fact that diseases such as schizophrenia and bipolar disorder generally manifest themselves in late adolescents and early adulthood, which is the same age during which individuals are most likely to use illegal drugs. Further, the hypothesis that marijuana may cause the onset of these serious mental illnesses is contradicted by the evidence that worldwide rates of schizophrenia have largely remained static despite dramatically changing rates of cannabis use by various populations over multiple generations. In fact, through my training and experience I have found cannabis has been successfully used to treat psychological disorders such as anxiety, depression and PTSD in a number of patients who have not found other treatments sufficiently helpful.

6. The psychological effects of cannabis are similar to those of many OTCs. For instance, relaxation, euphoria, and sedation are frequently reported with use of THC (the

psychoactive cannabinoid in marijuana). These same symptoms are common with cough medicines, antihistamines, nausea medication, and many others.

7. Clinical trials and case studies on human subjects support my opinion that cannabis is not only an effective medicine, but one with fewer and less serious side effects than many medications in common use. Examples discussed in detail herein include:

A. Acetaminophen (OTC analgesics Tylenol)

B. Dextromethorphan: (OTC cough medications)

C. Acetylsalicylic Acid (aspirin)

D. Ibuprofen (Advil and Motrin)

A. Acetaminophen: Common Brand Name, Tylenol

8. Acetaminophen, is a widely used temporary pain reliever and fever reducer. The substance carries a warning of the potential for severe liver damage even at relatively low doses. For instance, the Physician's Desk Reference (PDR) for Nonprescription Drugs warns that sever liver damage may occur if a patient takes more than 6 650 mg caplets in a 24 hour period, yet the recommended dose for adults is 2 650 mg caplets every 8 hours. Accordingly even small amounts over the recommended dose could cause serious harm.

9. Other side effects of this substance include upper gastrointestinal complications such as bleeding, and kidney damage. There is also some evidence that chronic users of acetaminophen may have a higher risk of developing blood cancer. For even modest users of alcohol, these effects are more pronounced.

10. The FDA issued a warning on August 2, 2013, that this substance could cause a serious skin reaction which could be fatal. Additionally, a 2010 study suggests that infertility of adults whose mother used acetaminophen while pregnant could be the result of such use.

11. Significantly, acetaminophen hepatotoxicity is the most common cause of acute liver failure in the United States, and results in more calls to poison control centers than the overdose of *any* other pharmacological substance. Even if treated, an overdose can lead to liver failure within days. While the most important toxic effect of acetaminophen is hepatic necrosis leading to liver failure after an overdose, there are also reported cases of renal failure after overdose. On

January 14, 2014, the FDA issued a recommendation to health care professionals to discontinue prescription combination drug products with more than 325 mg of acetaminophen in order to protect consumers from liver damage. In April of 2014, the FDA had to "remind" health care professionals to stop dispensing prescription combination drug products with more than 325 mg of acetaminophen because they were "no longer considered safe by the FDA."

B. Dextromethorphan Common brand names: Benylin, Nyquil and Robitussin

12. Dextromethorphan, also referred to as DXM or DM, is used to temporarily relieve cough due to minor throat and bronchial irritation. DXM is widely abused as it acts as a dissociative hallucinogen. Even at recommended doses it can cause nausea, drowsiness, dizziness, difficulty breathing, skin rashes, and hallucinations. At higher doses DXM can result in hallucinations, dissociation, vomiting, hypotenstion, hypertension, tachycardia, diarrhea, muscle spasms, sedation, euphoria, black outs, and loss of sight.

13. In addition, DXM can have serious heath consequences when taken at the same time or shortly after taking certain prescription medication used to treat depression, psychiatric conditions, and Parkinson's Disease.

14. Because this product simulates the effects of alcohol, it may be subject to abuse and addiction in the same way, and has resulted in overdose.

C. Acetylsalicylic Acid

15. Acetylsalicylic Acid, or aspirin, is a nonsteroidal anti-inflammatory drug used to temporarily relieve minor aches and pains, and to reduce fever. Even recommended doses commonly cause Dyspepsia and mild to life-threatening gastrointestinal blood loss, and allergic reactions such as hives, shock, facial swelling and asthma. Reye's syndrome, which is a rare but commonly fatal childhood illness, is a known risk to the use of aspirin. Further, toxic doses of this substance can cause tinnitus, deafness, nausea, abdominal pain, flushing and fever.

D. Ibuprofen: Common brand names include Advil and Motrin.

16. Ibuprofen is a nonsteroidal anti-inflammatory used for temporary pain relief and fever reduction. It is common for those taking therapeutic doses to suffer nausea, dyspepsia, gastrointestinal ulcerations and bleeding, raised liver enzymes, diarrhea, constipation, epistaxis,

headache, dizziness, rash, salt and fluid retention, and hypertension.

17. Ibuprofen may cause a severe allergic reaction, causing hives, facial swelling, asthma, shock, skin reddening, rash and blisters. Some studies indicate that chronic use of Ibuprofen may cause hypertension and possibly myocardial infarction, renal impairment, broncho spasm, and esophageal ulceration. Significantly, it can also be fatal to some asthmatics.

18. Also, when combined with diphenhydramine, the ingredients in Motrin PM, a patient is warned not to operate a motor vehicle, as it will cause drowsiness.

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19. Cannabis has not been linked to any of the serious side-effects associated with the above described OTC medications.

20. A widely used measure of a drug's harmful effect is the Therapeutic Index, or Ratio. This refers to the relationship between toxic and therapeutic dose, and is calculated by determining the ratio of the dose that produces toxicity (TD50) and dividing it by that which produces a clinically desired or effective response (ED50), in 50% of the subjects. A low therapeutic index heightens the drug's potential to be lethal. Some over-the-counter medications have a low Therapeutic Index, meaning the difference between the therapeutic and toxic dose is very small. For example, the estimated Therapeutic Index for acetaminophen is less than 3 and may be lower with alcohol use. The Therapeutic Index for aspirin is less than 5 and bleeding can occur even at the recommended dose. In contrast, the Therapeutic Index for cannabis is estimated to be between 1,000 and 40,000.[2]

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[2] It should be noted that, since there are no confirmed deaths nor life threatening harm caused by the overdose of marijuana, the Therapeutic Index for cannabis is theoretical. Also, because it would be impossible to ingest 1,000 to 40,000 times the therapeutic dose within the time required to test its impact, practically the Therapeutic Index in the case of marijuana ingestion does not exist.

21. The following table compares the Therapeutic Index of above OTCs with cannabis:

Substance	Therapeutic Index
Cannabis	1000 - 40,000
Dextromethorphan: (cough meds)	< 10
Acetaminophen	< 3
Aspirin	< 5
Ibuprofen	< 20

22. I have chosen to make the comparison between cannabis and over-the-counter medications to demonstrate the benign nature of the former; however, the obvious should be noted: the potential for abuse associated with prescription medications is far greater than that posed by OTCs, let alone cannabis. A comparison between cannabis and prescription medications demonstrates compelling evidence that the former is safer and can be more effective in treating illnesses. For example, the Therapeutic Index for many prescription medications such as psychiatric medications, opiates, cardiac medications, etc., are less than 10. The mortality rate for each of many prescription medications is significant. Furthermore, known side effects of prescription medications are far to numerous to here articulate. I can think of no prescription medication which has fewer potential harmful side effects than cannabis.

23. Finally, an evaluation of cannabis is not complete without comparing it to alcohol and tobacco. Tobacco being the more toxic substance, and alcohol a close second. The excess death rate associated with use and abuse of these substances is staggering. The Center for Disease Control and Prevention (CDC) reports more than 480,000 deaths are caused by smoked tobacco annually in the United States,[3] and nearly 90,000 deaths are caused by excessive use of

[3] Center for Disease Control and Prevention: Tobacco Related Mortality 2014, States,http://www.cdc.gov/tobacco/data_statistics/fact_sheets/index.htm

alcohol.[4]

Cannabis is Accepted in the Medical Community as a Safe and Effective Medication

24. Since the passage of the medical cannabis laws in states such as California, controlled studies have confirmed that cannabis is a safe and effective medicine for treating many medical conditions.

25. Medical practitioners overwhelmingly support the use of cannabis as medicine. A survey conducted by the *New England Journal of Medicine* in 2013 found that the majority of clinicians polled in favor of the use of marijuana for medicinal purposes, with votes in favor of cannabis' use as medicine tallying at 76%. Again, in April, 2014, a WebMD survey evidenced that 69% of surveyed physicians believed cannabis can help with certain treatments and conditions, and 67% agreed that cannabis should be a medical option for patients.[5]

26. Numerous associations of physicians and other medical practitioners in this country have called for the legalization of cannabis as medicine, including, but not limited to: the Epilepsy Foundation of America, American Medical Student Association, American Nurses Association, American Preventive Medical Association, American Public Health Association, as well as various associations for the following states: Alaska, California, Colorado, Connecticut, Florida, Hawaii, Illinois, Mississippi, New Jersey, New Mexico, New York, North Carolina, Rhode Island, Texas, Vermont, and Wisconsin. Further, many others, including but not limited to the American Medical Association and the American Cancer Society, have called for further clinical research into the potential medical benefits of cannabis.

27. Cannabis has also been increasingly recognized as an effective and safe medicine in government-funded studies.

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[4] Center for Disease Control and Prevention: Fact Sheet Alcohol Use and Health, 2014 http://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm. Furthermore, the 2014 WHO (World Health Organization) Report on Alcohol-Induced Mortality found there were 3.3 million alcohol-related deaths in 2012 worldwide. http://www.who.int/substance_abuse/publications/global_alcohol_report/en/

[5] http://www.webmd.com/news/breaking-news/marijuana-on-main-street/20140225/webmd-marijuana-survey-web

28. For example, the National Institutes of Health's National Institute on Drug Abuse [NIDA] funded a project performed at the University of California at Los Angeles. The purpose of this project was to determine if smoking cannabis increased the risk of cancer similar to smoking tobacco. The researchers concluded: "[C]ontrary to our expectations, we found no positive associations between marijuana use and lung or UAT [Upper Aerodigestive Tract] cancers. Although we observed positive dose-response relations of marijuana use to oral and laryngeal cancers in the crude analyses, the trend was no longer observed when adjusting for potential confounders, especially cigarette smoking. In fact, we observed ORs <1 for all cancers except for oral cancer, and a consistent monotonic association was not apparent for any outcome."[6]

29. Beginning in 2000, the state of California sponsored a number of randomized, placebo controlled trials evaluating the safety and therapeutic efficacy of whole smoked cannabis for a variety of patient populations, including subjects diagnosed with multiple sclerosis, HIV, and chronic neuropathy. A review of these trials, published in 2012, by Igor Grant, M.D., (CMCR), J. Hampton Atkinson, Ben Gouaux, and Barth Wilse, concluded:

> Based on evidence currently available the Schedule I classification is not tenable; it is not accurate that cannabis has no medical value, or that information on safety is lacking. It is true cannabis has some abuse potential, but its profile more closely resembles drugs in Schedule III (where codeine and dronabinol are listed). The continuing conflict between scientific evidence and political ideology will hopefully be reconciled in a judicious manner.[7]

30. Even the National Highway Traffic Safety Administration, a Federal agency, has published reports recognizing the medicinal use of cannabis in its Drugs and Human Performance Fact Sheet, which states:

> Medical and Recreational Uses: Medicinal: Indicated for the treatment of anorexia associated with weight loss in patients with AIDS and to treat mild to moderate nausea and vomiting associated with cancer chemotherapy.

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[6] Hashibe et al. 2006. *Marijuana Use and the Risk of Lung and Upper Aerodigestive Tract Cancers: Results of a Population-Based Case-Control Study* 15: Cancer Epidemiology Biomarkers and Prevention: 1829

[7] Igor Grant, M.D., et. al., "*Medical Marijuana: Clearing Away the Smoke,*" The Open Neurology Journal, 2012, 6, p. 18-25.

31. In my practice, I cautioned patients to avoid driving after using many prescription drugs, over the counter medications, as well as cannabis. I believe cannabis can influence psychomotor performance, particularly among more naive subjects and/or if consumed in concert with alcohol. The relative risk, however, associated with marijuana-only positive drivers and accidents is relatively low. Further, studies have shown that the impact of cannabis use on driving performance is relatively small. The federal government's own sponsored studies inform this opinion. (See, e.g., *Visual Search and Urban City Driving Under the Influence of Marijuana and Alcohol*, "It was concluded that the effects of low doses of THC (100 mg/kg) and alcohol (BAC<0.05 g/dl) on visual search and general driving proficiency are minimal when taken alone, but potentially dangerous for traffic safety when taken in combination,"[8] and *Marijuana and Actual Driving Performance*, "THC's adverse effects on driving performance appear relatively small."[9]

32. Further, in 2013, a meta-analysis published in the Journal *Accident Analysis and Prevention* indicates that the adjusted odds ratio for the likelihood of a marijuana positive driver being culpable in a traffic accident compared to a drug-negative driver is just above 1 (not statistically significant at the 5% level) and is on par with the odds ratios associated with penicillin and anti-histamines.[10] By contrast, a recent paper identified greater odds of culpability of accident associated with drivers with a BAC of .01% (OR=1.46).[11]

33. Due to cannabis' status as a Schedule I substance, researchers desirous of obtaining marijuana for scientific and medical study must, by federal statute, seek approval from the DEA, Public Health Service, FDA, and the NIDA. While this has proven to be difficult for some investigators, clinical studies evaluating the safety and therapeutic efficacy of cannabis are being

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[8] http://ntl.bts.gov/lib/26000/26000/26003/DOT-HS-809-020.pdf

[9] http://ntl.bts.gov/lib/25000/25800/25867/DOT-HS-808-078.pdf

[10] Rune Elvik. 2013. *Risk of road accident associated with the use of drugs: a systematic review and meta-analysis of evidence from epidemiological studies*. Accident Analysis and Prevention 60: 254-267.

[11] http://injuryprevention.bmj.com/content/early/2014/01/07/injuryprev-2013-040925.

conducted both in the United States and abroad.[12] I have listed numerous peer-reviewed papers assessing the therapeutic use of cannabis in human subjects in the attached addendum; these include several randomized, placebo-controlled trial designs. This body of research demonstrates remarkable promise in using cannabis to treat the following illnesses, diseases and symptoms: Parkinson's Disease, Crohn's Disease, Pain, Epilepsy, Cancer, Irritable Bowl Syndrom, Diabetes, Post Traumatic Stress, Neuropathy, Multiple Sclerosis, HIV, Fibromyalgia, Cluster Headaches, Schizophrenia, Hepatitis C, and Incontinence.

34. Further research was presented at the Eighth National Clinical Conference on Cannabis Therapeutics (a Continuing Medical Education course). Physicians and scientist from around the world presented the results of studies conducted to test the efficacy and danger of using cannabis to treat Alzheimer's Disease (Julian Romero, Ph.D.), Neuromuscular Diseases, (Greg Carter, M.D.), Hepatitis C, (Diana Silvestre, M.D.), Cancer, (Donald Abrams, M.D, and Sara Jane Ward, Ph.D.) Cardiovascular Problems (Reem Smoum, Ph.D.), Cannabis Use in Nursing Homes in both California and Israel (Jeffrey Hergenrather, M.D., and Zack Klein, MSc[13] Candidate), Cannabis Use in Hospice and Palliative Medicine, (Sunil Aggarwal, M.D. Ph.D.) These studies overwhelmingly conclude that cannabis is an effective and safe medicine. Further,

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[12] It should be noted that Dr. Tashkin had some difficulty getting his research paper published after his results demonstrated cannabis was not a carcinogenic despite the fact that it was sponsored by the National Institutes of Health. Also, Donald Abrams, M.D., had difficulty acquiring research grade cannabis for his landmark study dealing with cannabis and AIDS. And, Dr Lyle Craker's attempts to acquire a license to produce research grade cannabis, like the one issued in Mississippi for the NIDA program, have been unsuccessful.

[13] The use of cannabis to treat patients suffering from dementia and Parkinson's Disease at a nursing home in Tel-Aviv was featured on a special television program reported by Sanja Gupta (http://edition.cnn.com/TRANSCRIPTS/1403/09/se.01.html.) It included 27 patients, some of whom are Holocaust survivors, and demonstrate the following results after cannabis treatment: (1) Discontinuation of pain relief medications, (2) improvement of appetite and weight gain, (3) Improvement in eating ability, (4) decreased muscle contractions, (5) Improved sleep and decrease in the use of sleeping medications, and (6) discontinues use of enema treatments. Observational data from 113 cancer patients using cannabis at an academic medical center in Israel was published on June 14, 2014, and concluded: "Cannabis use is perceived as highly effective by some patients with advanced cancer and its administration can be regulated, even by local authorities. Additional studies are required in order to evaluate the efficacy of cannabis as part of the palliative treatment of cancer patients." J Pain Symptom Manage 2014 Jun 14, *Patterns of Use of Medical Cannabis Among Israeli Cancer Patients: A Single Institution Experience*. http://www.ncbi.nlm.nih.gov/pubmed/24937161.

these results are supported by the scientific understanding of how the naturally occurring endocannabinoids react and interact with various cannabinoids in the marijuana plant which explains the remarkable heath improvement.

35. Since the passage of the medical cannabis laws in states such as California, scientific studies have confirmed that cannabis is a safe and effective medicine for treating many medical conditions. In 2011, Gregory T. Carter, MD, MS, Mitchell Earleywine, PhD, and Jason T. McGill, JD, prepared a comprehensive report outlining the research and scientific evidence supporting the use of cannabis as medicine which was incorporated into a petition brought by several state Governors pressing for the rescheduling of marijuana. The report concludes that the mounting scientific evidence and consensus of medical opinion support the position I propose: it is irrational to classify marijuana as a schedule I controlled substance as it fails to meet the criteria for so doing. Further, the report refutes all assertions recently made by the DEA regarding the harmful effects of cannabis.

Cannabis can be safely used particularly under medical supervision

36. The federal government has conducted its own medical cannabis program through the National Institutes of Drug Abuse which has been supervising the distribution of marijuana for almost forty years.

37. As a physician practicing in California following the passage of the Compassionate Use Act, I was easily able to monitor my patients use of cannabis as medicine. In fact, because marijuana has minimal toxicity and has limited side effects, patients using cannabis are much easier to care for than those taking routinely prescribed medications.

38. Furthermore, as a founding member of The Society of Cannabis Clinicians as well as through my involvement in other professional organizations, I have had many opportunities to discuss the experiences of my colleagues who agree supervision of cannabis patients pose few medical concerns. In fact, the greatest concern for our medical cannabis patients arises out of the fact that marijuana remains illegal for all purposes under federal law, thereby increasing the price of obtaining their medicine and the risk of cultivating the plant.

39. The argument is sometimes made that the risks described above can be avoided since

the medicinal benefits of marijuana are available through prescription Marinol - a synthetic form of THC approved by the FDA for the treatment of wasting syndrom associated with cancer and AIDS. Patients, however, report that the use of Marinol is ineffectual because swallowing a pill can prove impossible for those using the drug to reduce nausea. Moreover, Marinol incorporates only the one cannabanoid, ironically the one which produces the most psychoactive effect, yet studies have established that cannabidiol (CBD), a non-psychoactive cannabinoid, is effective in treating many serious illnesses including controlling seizures.

40. As is obvious from the studies referenced in my addendum, the therapeutic qualities of the cannabis plant reach far beyond the treatment of anorexia and nausea

41. In fact, while there has yet to be a clinical trial testing the hypothesis, there is much speculation within the medical community regarding the potential benefits produced from strains of marijuana which contain low levels of THC. In the May 2014 issue of *Scientific American*, it was reported that researchers are conducting a year-long trial to test whether the use of cannabidiol, one of the cannabinoids found in the marijuana plant, diminishes the epileptic activity in 150 children who have not been helped by standard seizure medication. On June 17, 2014, GW Pharmaceuticals in the UK released clinical data from this study evaluating the use of a cannabis-based extract high in cannabidiol content in 27 patients with intractable pediatric epilepsy which indicated an overall reduction in seizure frequency as compared to baseline seizure frequency was 44% and median overall reduction in seizure frequency as compared to baseline seizure frequency was 42%.[14]

42. Since the publicity surrounding the use of a high CBD/low THC strain of the cannabis to treat a six year old child suffering from Dravet Syndrom in Colorado, families with children suffering from seizure disorders have been relocating to Colorado in order to seek cannabis treatment. Margaret Gedde, M.D., a Colorado Springs physician, has been monitoring 11 children using cannabis to treat their severe seizures. In a November 2013 interview with a

[14] While the children in these studies are being treated with cannabis-based extract containing high concentrations of cannabidiol - a naturally occurring compound in cannabis, this extract is still classified as a Schedule I Controlled Substance in the United States.

reporter from the Salt Lake City Tribune, Dr. Gedde reported nine of these children have had a 90 to 100 percent reduction in their seizures, one has had a 50% reduction, and one has reported no change.

43. It is apparent that medical supervision is not only possible, but is occurring in places like Colorado where the community has come together to successfully supervise the administration of cannabis to the most vulnerable of our society: severely compromised young children.

44. In sum, it is my considered opinion that including marijuana and THC in Schedule I of the Controlled Substances Act is inappropriate for the following reasons:

A. Medicinal cannabis is effective for many medical conditions;

B. Medicinal cannabis can be used safely, particularly under medical supervision;

C. Medicinal cannabis is safer than the use of many other commonly used medications;

D. The major harm of cannabis use is its continued illegality.

I declare under penalty of perjury that the foregoing is true and correct, except for those matters stated on information and belief, and as to those matters I believe them to be true. This declaration signed on the 19th day of June, 2014, in Pahoa, Hawaii.

/s/ Philip A. Denney, M.D.
PHILIP A. DENNEY, M.D.

DECLARATION OF PHILIP A DENNEY, M.D.
ADDENDUM

I, Philip A. Denney, M.D., provide the following as a non-exhaustive list of recent, relevant controlled trials, case-reports, observational trials, survey data, or reviews in the peer-reviewed literature indicating the safety and efficacy of the administration of whole-plant cannabis or cannabinoids in specific patient populations. I have distinguished for this Court these research papers as they are the most informative due to the applied scientific design of the study.

Waissengrin B et al. 2014 Jun 14 [Epub ahead of print] Patterns of Use of Medical Cannabis Among Israeli Cancer Patients: A Single Institution Experience. *Journal of Pain Symptom Management* (2014. Doi:10.1016/j.painsymman.2014.05.018
SURVEY AND OBSERVATIONAL, CLINICAL (NO PLACEBO GROUP)

Lotan et al., 2014. Cannabis (medical marijuana) treatment for motor and non-motor symptoms of Parkinson disease: an open-label observational study. Clinical Neuropharmacology 37: 41-44. OBSERVATIONAL, CLINICAL (NO PLACEBO GROUP)

Natfali et al., 2013. Cannabis Induces a Clinical Response in Patients with Crohn's Disease: a Prospective Placebo-Controlled Study. Clinical Gastroenterology and Hepatology 11: 1276-1280. CLINICAL, PLACEBO-CONTROLLED

Cooper et al, 2013. Comparison of the Analgesic Effects of Dronabinol and Smoked Marijuana In Daily Marijuana Smokers. Neuropsychopharmacology 38: 1984-1992. CLINICAL, PLACEBO-CONTROLLED

Porter and Jacobson. 2013. Report of a parent survey of cannabidiol-enriched cannabis use in pediatric treatment-resistant epilepsy. Epilepsy & Behavior 29: 574-577 SURVEY

Singh and Bali. 2013. Cannabis extract treatment for terminal acute lymphoblastic leukemia with a Philadelphia chromosome mutation. Case reports in Oncology 6: 585-592. CASE SUMMARY

Ravikoff et al., 2013. Marijuana use patterns among patients with inflammatory bowel disease. Inflammatory Bowel Diseases 19: 2809-2814. SURVEY

Penner et al. 2013. Marijuana use on glucose, insulin, and insulin resistance among US adults. American Journal of Medicine 126: 583-589. OBSERVATIONAL, CASE-CONTROL

Grant et al., 2012. Medical marijuana: Clearing away the smoke. The Open Neurology Journal 6: 18-25. LITERATURE REVIEW

Bostwick. 2012. Blurred boundaries: The therapeutics and politics of medical marijuana. Mayo Clinic Proceedings 2: 172-186. LITERATURE REVIEW

Passie et al., 2012. Mitigation of post-traumatic stress symptoms by Cannabis resin: a review of the clinical and neurobiological evidence. Drug Testing & Analysis 4: 649-659. CASE SUMMARY

Rajavashisth et al. 2012. Decreased prevalence of diabetes in marijuana users. BMJ Open 2 OBSERVATIONAL, CASE-CONTROL

Wilsey et al., 2012. Low-dose vaporized cannabis significantly improves neuropathic pain. The

Journal of Pain 14: 136-148. CLINICAL, PLACEBO CONTROLLED

Corey-Bloom et al. 2012. Smoked cannabis for spasticity in multiple sclerosis: a randomized, placebo-controlled trial. Journal of the Canadian Medical Association 184: 1143-50. CLINICAL, PLACEBO-CONTROLLED

Riggs et al.. 2011. A pilot study of the effects of cannabis on appetite hormones in HIV-infected adult men. Brain Research 1431: 46-52. CLINICAL, PLACEBO-CONTROLLED

Abrams et al. 2011. Cannabinoid-opiod interaction in chronic pain. Clinical Pharmacology & Therapeutics 90: 844-851. CLINICAL, OBSERVATIONAL (NO PLACEBO GROUP)

Fiz et al. 2011. Cannabis use in patients with fibromyalgia: Effect on symptoms relief and health-related quality of life. PLoS One 6. OBSERVATIONAL, CASE-CONTROL

Lal et al. 2011. Cannabis use among patients with inflammatory bowel disease. European Journal of Gastroenterology & Hepatology 23: 891-896. SURVEY

Naftali et al. 2011. Treatment of Crohn's disease with cannabis: an observational study. Journal of the Israeli Medical Association 13: 455-458. OBSERVATIONAL, CLINICAL (NO PLACEBO GROUP)

Foroughi et al., 2011. Spontaneous regression of septum pellucidum/forniceal pilocytic astrocytomas--possible role of Cannabis inhalation. Child's Nervous System 27: 671-679. CASE REPORT

Ware et al. 2010. Smoked cannabis for chronic neuropathic pain: a randomized controlled trial. CMAJ 182: 694-701. CLINICAL, PLACEBO-CONTROLLED

Hazekamp and Grotenhermen. 2010. Review on clinical studies with cannabis and cannabinoids 2005-2009. (Special issue): 1-21 LITERATURE REVIEW

Robbins et al. 2009. Cluster attacks responsive to recreational cannabis and dronabinol. Headache 49: 914-916 CASE REPORT

Corless et al. 2009. Marijuana effectiveness as an HIV self-care strategy. Clinical Nursing Research 18: 172-193. SURVEY

Costain. 2008. The effects of cannabis abuse on the symptoms of schizophrenia: patient perspectives. International Journal of Mental Health Nursing 17: 227-235. SURVEY

Wilsey et al. 2008. A randomized, placebo-controlled, crossover trial of cannabis cigarettes in neuropathic pain. Journal of Pain 9: 506-521. CLINICAL, PLACEBO-CONTROLLED

Ellis et al. 2008. Smoked medicinal cannabis for neuropathic pain in HIV: a randomized, crossover clinical trial. Neuropsychopharmacology 34: 672-80. CLINICAL, PLACEBO-CONTROLLED

Abrams et al. 2007. Cannabis in painful HIV-associated sensory neuropathy: a randomized placebo-controlled trial. Neurology 68: 515-521. CLINICAL, PLACEBO-CONTROLLED

Wallace et al. 2007. Dose-dependent Effects of Smoked Cannabis on Capsaicin-induced Pain and Hyperalgesia in Healthy Volunteers. Anesthesiology 107: 785-796. CLINICAL, PLACEBO-CONTROLLED

Haney et al. 2007. Dronabinol and marijuana in HIV-positive marijuana smokers. Caloric intake,

mood, and sleep. Journal of Acquired Immune Deficiency Syndrome 45: 545-554. CLINICAL, COMPARATIVE (NO PLACEBO GROUP)

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Venderova et al. 2004. Survey on cannabis use in Parkinson's disease: subjective improvement of motor symptoms. Movement Disorders 19: 1102-1106. SURVEY

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CURRICULUM VITAE

PERSONAL:

Age 55; Married to Latitia; Three children: Sarah, age 29, Elizabeth, age 27, Camille 19; Height 5'10"; Weight 180 lbs.

BACKGROUND:

Born in Washington, D.C.; raised in Hyattsville, MD. Father – Architect; Mother – Registered Nurse. Eldest of three brothers and four sisters. Roman Catholic primary and high school education with participation in baseball, football and boxing with Hyattsville Boys Club.

MILITARY:

U. S. Navy (1966-1972); Active Duty (1966-1970). Aircraft Emergency Equipmentman Second Class (ES). Antisubmarine Flight Crewman, Atlantic Patrol, 1,000 hours flight time. Sport parachute team member.

EDUCATION:

- Pennsylvania State University (1968)
- Bucks County Community College (1968-1971)
- Ohio University (1970-1972); Honors College (1971)
  - Board of Directors of United Campus Ministry (1971)
  - Psychiatric Technician, Athens State Hospital (1970-1972)
  - Clavine Alkaloid Research (1972)
- University of Southern California School of Medicine (1972-1976)
  - Doctor of Medicine (June 3, 1976)
  - Foothill Free Clinic (1974-1976)
  - CMA Alternate Delegate (1973-1974); CMA Delegate (1974-1975)
  - Consultant Reference Committee "B" CMA (1975)

PROFESSIONAL ACTIVITIES:

- L.A. County – USC Medical Center – Flex "A" rotating internship (1976-1977)
- Auburn Medical Clinic, Auburn, CA – Group general and family medical practice (1977-1978)
- Greenwood Medical Clinic, Greenwood, CA – Solo general and family medical practice (1978-1984)
- Sacramento Emergency Medical Group, Cordova Health Center, Rancho Cordova, CA – Urgent Care/Family practice (1984-1987)
- Med Center Medical Group, Citrus Heights, CA – Facility Medical Director, Urgent Care/Family practice (1987-1989)
- Sierra Pacific Emergency Medical Group, Mercy San Juan Hospital Satellite Facility, Carmichael, CA – Assistant Medical Director/Emergency Services (1989-1994)
- Medical Clinic of Sacramento, Sacramento, CA – Urgent Care (1994-1996)
- Meridian Occupational Medicine Group, Sacramento, CA – Facility Medical Director (1996-1997)
- Healthsouth Medical Clinic, Rocklin, CA – Facility Medical Director (1997-1999)
- Marshall Hospital – Medical Director, Marshall Center for Occupational Health (1999-2000)
- Phillip A. Denney, M.D. – Medical Cannabis Evaluation (2000- Present)
- Medicinal Cannabis Testimony – Alameda, Alpine, Butte, El Dorado, Humboldt, Napa, Nevada, Placer, Riverside, Sacramento, San Bernardino, San Francisco, San Joaquin, Santa Clara, Shasta, Sonoma, Stanislaus, Tehama, Trinity and Tulare Counties
- Guest lecturer- USC School of Medicine- Clinical Uses of Cannabis (2005)
- Testimony Medicinal Cannabis Policy- Arkansas State Legislature (2005)

HOSPITAL PRIVILEGES:

- Auburn Faith Community Hospital – Attending staff in family medicine, pediatrics and obstetrics (1977-1985)
- Sutter General Hospital – Attending staff, family practice (1985-1987)
- Mercy San Juan Hospital – Senior staff, emergency medicine (1989-1994)
- Marshall Hospital-Courtesy staff (1999 to 2000)
- California License G34393; BNDD Number AD 7581045

PROFESSIONAL SOCIETIES:

- Society of Cannabis Clinicians- President (2006 to present)