



To: Timothy Hinterberger, Ph.D.;
Chair, Alaskans for Rights & Revenues;
Acting Chair, Alaska Drug Policy Forum
From: Mariann Garner-Wizard
Date: February 14, 2005
Re: April 4, 1988 Memorandum from K Hart, Legislative Analyst, to Reps. J Ellis and N Kaponen, Co-chairs, Alaska House Health, Education and Social Services Committee: "Findings on Marijuana (Senate Bill 32) and Comparison With Alcohol and Tobacco (Research Request 88.212)"

The reviewed report, part of the Committee's preparation for hearings on recriminalization of marijuana, examined the "findings" of the Senate Bill for accuracy, and, where possible, presented similar information for alcohol and tobacco.

Similar concerns as in the 1988 bill's findings are likely to be raised in the 2005 session, either in proposed legislation or in testimony; thus, I have analyzed the quality of evidence examined in 1988 by the House researcher, flagging points which should be followed up, and suggesting a few ways to strengthen advocate testimony in 2005. I can provide some additional information on specific studies, but do not have unlimited access to this information, and recommend immediately seeking other sources, especially active research scientists.

Follow-Up Questions and Research Recommendations for 2005:

1. **Footnote 1, p. 1**, quotes a NIDA report to Congress: "The roles of... (THC) in marijuana, ethanol in alcoholic beverages, and nicotine in tobacco products are similar in terms of drug abuse or addiction".

What if any scientific evidence supports this conclusion? Much of the succeeding information in the AK House report, beginning on p. 4, actually contradicts this claim.

IT IS VITAL TO ESTABLISH THAT THE SIMILARITIES AMONG MARIJUANA, TOBACCO, AND ALCOHOL WHICH SUGGEST SIMILAR STRATEGIES OF REGULATION ARE NOT BASED UPON

MEDICAL FACTS OR BIOLOGICAL ACTIVITY, BUT UPON SOCIAL PROCESSES AND CONSTITUTIONAL RIGHTS.

2. **Footnote 2, p. 1** refers to "Senator Fischer's materials on marijuana", which were not included in this staff analysis.

Who is/was Sen. Fisher; is he still on the scene?

Primary Findings

Finding 1, p. 2. "Marijuana and other cannabis preparations may contain over 420 different compounds." This fact, it was argued by the recrim bill's authors, increases chances of toxicity. While it is obvious that cannabis has many components, there is no actual support presented for harmful consequences of this fact. Disputing the theory, Hart quotes Jon Gettman, at the time National Director of NORML (who provided me with a copy of the Hart report in July, 2004): "There is no correlation... between the number of compounds a substance contains and its capacity to pose a ... health hazard."

This is all well and good, however, the argument can be strengthened, and should be so, proactively, to assert that one trend in pharmaceutical products is the multi-compound drug; that synergy among compounds is essential to many phytomedicines; and that toxicity is much more likely to result from overdoses of single-compound substances (e.g., most prescription drugs) than those with numerous components (Marlys Schneider of UAF made a similar observation to Hart).

Opium and coca, which Gettman named as less toxic than their refined by-products, are *not* the best examples of plants with many compounds which are beneficial as a whole or in part! Why compare weed to coke and smack when it can be compared to purple foxglove, source of digitalis; "deadly" nightshade, source of atropine; or even willow bark, from which aspirin is derived? At least 30% of all single-compound pharmaceuticals come directly from plants, all of which contain many compounds.

On the same page, similarly, Schneider's comments, while not quoted, seem less than the strongest argument: toxicity ("harmfulness") is determined *both* by "what:" *and* by "how much"; almost any substance is harmful in large enough quantities and this is not stated.

There is no meaningful comparison with either alcohol or tobacco on this finding; alcohol is one chemical (ethanol); for tobacco smoke, Hart merely notes that it has over 1500 compounds and names a few types of chemicals found in it.

Finding 2, p. 3. "Tetrahydrocannabinol (THC), one of the pharmacologically active compounds in marijuana, is not soluble in water, but goes into the fatty tissues of the brain, testicles, ovaries, and other internal organs and takes as long as 30 days to be eliminated from the body." Again, while stating some of the terms of marijuana's metabolism within the body accurately, no evidence is presented that these increase risk. In fact, while water solubility is all that keeps alcohol and nicotine from fatally poisoning their users, their damaging effects persist long past metabolization. Since marijuana is *not* water soluble, yet its users do *not* die upon smoking it, this is almost a good argument for its safety!

3. **P. 4** refers to one of NIDA's four "high priority research projects" in 1987 as determining "the significance of the accumulation of cannabinoids in lipid tissues over years", with particular interest in whether or not "the retention of THC and its congeners in lipid membranes of the gonads and neurons produce undesired changes" (quotes in House report).

Has any such research been done?

Finding 3, p. 4. "The buildup of THC in the system means that repeated administration of even small doses may lead to an accumulation of the drug higher than levels reached at any time after a single dose." Hart did not comment on the illogicality of this finding. "Accumulation" cannot be higher than the level reached "at any time after a single dose", unless there is a multiplication effect in addition to accumulation. The level reached just after some "doses" must be, at that particular time, the "highest." level reached, including both accumulated and just-administered compounds. $1 + 1 \neq 3$.

For this finding, as for previous ones, there is no evidence presented that the presence of marijuana metabolites in fatty tissues presents an increased hazard, or even that these metabolites continue to be bioactive while stored. The body processes many substances in complex pathways which are not often instantaneous; this is nothing in itself to raise alarm!

Gettman and Dr. McBay told Hart that marijuana's psychoactive effects are short-lived, *but this is not what is being presented as the hazard of its use here.*¹ The underlying "hazard" is the possibility that a regular user of marijuana may suddenly become "higher than... at any (other) time"; *it is this imaginary hazard which must be dispelled by proponents of legal regulation!*

This section includes a quote which expresses a certain scorn for self-titration; yet the inability to self-titrate is exactly the problem with many standard dosage drugs, including Marinol© and many pain relievers. The "average" effective and safe dose may be neither efficacious nor safe for many individuals. Today, patient controlled dosing of painkillers is quite common, resulting in better pain relief and fewer problems with excessive dosing.

Finally, a quote to the effect that DDT, "which clings on in the body" about as long as THC, was banned because of its staying power is simply false; DDT was banned because it is a deadly toxin, demonstrated to cause birth defects in humans and animals, thin eggshells in bird populations, etc.

Finding 4, p. 5. "The buildup of THC in the body causes the user to smoke more marijuana to achieve the desired high and may result in loss of sleep, appetite, and initiative, as well as moodiness and depression..." Building on the logical and factual error of the preceding finding, this one embellishes the picture of the desperate pot addict, whose ever-increasing need for ever-increasing quantities of a drug may lead him or her to acts of desperation. In fact, tolerance cannot build past the 30-day flushing period. People don't keep "needing" more and *more* and MORE weed to get high; there is a "top end". Someone who has smoked dope for years will "test clean" after 30 days of abstinence.²

Incredibly, no opposition to this finding is cited. Instead, Hart drags in the elusive "amotivational syndrome", asserting that it exists "in fact", but allowing that "interpretation of the evidence is difficult"; and "such symptoms have been known to occur" without pot. While acknowledging that marijuana may not *cause* apathy, loss of ambition, loss of effectiveness, etc., the author hypothesizes that it may be the other way around, as these "unhappy people", already beset by "declining work or school performance", "escape" into drugs.

There is no recognition here that it is the illegality of marijuana use, and its legal consequence, which may make it a "counterproductive" behavior!

4. New research on brain development showing that the human brain doesn't stop growing until age 26 or so. Will it be argued that marijuana may interfere with or prevent normal brain development?

5. Hart writes that alcohol intoxication and withdrawal from tobacco use each may produce specific impairments, including, for tobacco, performance on simulated driving

¹ I have compared marijuana's fleeting effects and residual metabolites to those of candy: while the sweet taste doesn't linger, any more than the high, it "lasts a lifetime on the hips", for daily smokers as well as "chocoholics".

² I have personally experienced this reassuring phenomenon.

tests, vigilance, and pair-associate learning. Because of the *a priori* assumption that the three substances being compared act similarly (*see 1. above*), there is an implication that marijuana use or "withdrawal" may create similar effects. Fortunately, there are well-crafted recent studies which dispute this assumption (Russo, Mathre, Byrne, et. al³).

Finding 5, p. 7. "It is possible for a human being to overdose from the use of marijuana, especially if it is used in conjunction with alcohol, because it increases the effects of alcohol." While commenting that the term "overdose" is vague, Hart supports this finding with a 1980 report asserting that "consumption of any substance" leads to "increased consumption of all other substances"; this seems ludicrous on the face of it but must be subjected to logical dismantling.

6. Hart's report meanders through some fairly irrelevant material in order to raise the issue of whether or not a person who is high on marijuana and also drinks too much alcohol will fail to vomit before passing out, thus increasing risk of death "*due to alcohol overdose*". (emphasis added) Nothing more than raw speculation is cited for or against this theory, and I don't believe it will be important in the upcoming legislative hearings, but *the specter of "overdose" will no doubt be raised in some form*, whether from ever-stronger marijuana (*see below*), or from marijuana in combination with another substance.⁴

This "possibility" rests upon the misunderstandings reflected in the preceding findings; it can be put to rest by demolishing them.

7. Oddly, Hart did not find any mention of nicotine overdoses. Nicotine is a poison, used in pesticides and insecticides. Parenthetically, this points to a discussion of different effects of substances with different routes of ingestion.⁵

Finding 6, p. 9. "The THC content of commonly available marijuana has increased from less than one percent 10 years ago to as high as 10 percent today."

8. This issue will certainly be important in 2005, with the reputed strength of Alaskan pot a particular topic. I believe there is some new work available which may help put this claim into perspective, but the best counter-argument is that raised here by Todd Mikuriya concerning self-titration. It is backed up by similar findings regarding tobacco; smokers who switch to lower potency cigs will smoke more to get their dose. To the extent it reduces quantities smoked, *more potent marijuana is a good thing*.

Unfortunately, findings by Mikuriya and Michael Aldrich regarding relative marijuana strength are not presented clearly here; their remarks on using low end marijuana potency as a baseline are unexplained in terms of the reports they critiqued.

³ Russo E, Mathre ML, Byrne A, Velin, R, Bach PJ, Sanchez-Ramos J, Kirilin KA. Chronic Cannabis Use in the Compassionate Investigational New Drug Program: An Examination of Benefits and Adverse Effects of Legal Clinical Cannabis. *Journal of Cannabis Therapeutics*. 2002;1(2):3-57.

⁴ Adulteration has haunted the herbal supplements industry for years, and only since passage of the 1994 Dietary Supplement Health Education Act (DSHEA) have industry standards for purity and good manufacturing processes substantially "cleaned up" these products. In the unregulated marijuana black market, adulteration with codeine cough syrup, amphetamines, and prescription and "designer" drugs is common, subject to underground fads and totally lacking safety standards.

⁵ Again on the subject of adulteration, the present author observed in Alaska the practice of mixing marijuana with tobacco in hand-rolled cigarettes, ostensibly in order to disguise the marijuana scent in public. However, only regular tobacco smokers were seen to exercise this practice.

Finding 7, p. 10. "Marijuana with THC content higher than one percent is generally available in the state, through both importation and local cultivation."

9. While this finding no doubt remains true today, again, because self-titration reduces smoke exposure, and also because high-quality crops will be more commercially viable under regulation, cultivators' successes in plant breeding should be seen as positives.⁶

Note the assertion that in 1988, 90% of Alaska's marijuana came from Hawaii and the Lower 48; surely that ratio is now mostly reversed (with imports from Canada increased as well?)

Finding 8, p. 11. "Marijuana may cause schizophrenia, illusions, and hallucinations, including dulling of the senses, creating the possibility that the user is unable to respond to the body's signals, such as pain." In a lengthy section on mental illness potentially caused or exacerbated by *very heavy doses of marijuana*, primarily in *individuals with prior histories of mental or emotional disorders* (emphases added), the best that can be deduced is that: a) crazy dopers can still feel pain; b) "acute brain syndrome" wears off in 4 hours or less; c) even NIDA finds it hard "to distinguish the role of cannabis from that of pre-existing psychological problems or other... precipitants in *marijuana-related psychological difficulties*" (emphasis added); and d) The American Psychiatric Association finds general agreement that "persons suffering from *marijuana psychosis* do not develop... symptoms characteristic of schizophrenia." (emphasis added)

The main effect of this finding is to reinforce the emerging picture of the marijuana user, needing ever-increasing quantities of an ever-more-potent "drug", becoming at last totally unhinged and no longer able to feel the pain, even, of a Tazer weapon...

10. The "pain" part of this finding, even though Hart dismissed it as unsupported, causes me concern that it may surface again, in light of strong evidence that marijuana is an effective pain reliever, including for some pain for which no other effective medicine is known. To twist this amazing medical prospect (especially after the Vioxx© debacle!) into a frightening boogey-man may seem far-fetched, *but so would the assertions of "full blown acute toxic psychosis with loss of contact with reality" and "clouding of mental processes", if they were not already part of the drug debate's lingua franca.*

11. To individuals who have not experienced the "loss of contact with reality" of marijuana use, the notion that a sane person might voluntarily seek such an experience is virtually incomprehensible. Clinical descriptions of what may best be described as mental/spiritual experiences mislead and frighten with their blind objectivity.

Seek expert testimony from people like Rick Doblin, Richard Glen Boire and Wrye Sententia concerning the use of intoxicants by human beings and the positive roles which temporarily "disconnecting from reality" can play in today's world.

The simple analogy of a vacation from work, or of being underwater in the deep end of the swimming hole, may strike a chord in people who don't see how "getting high" can be a good idea.

Finding 9, p. 13. "Although it may take a heavy cigarette smoker as long as 20 years to develop lung cancer, one marijuana cigarette a day may cause lung cancer in three years." Hart found no direct support for this finding, and there is unlikely to be found any today. *However, the notion that marijuana smoking can cause lung disorders is intuitively plausible.* The Dispute concentrates on comparing amount

⁶ Alaska's "signature grasses" (e.g. Mat Su Thunderfudge, Valley Girl's Gold, Red Badger Courage) might be marketed like California's varietal wines.

of potential carcinogens in an average amount of marijuana smoked daily with that in an average amount of tobacco smoked daily; while this is, again, all well and good, it does not go far enough.

12. Find research indicating that cannabis may have anti-cancer effects. For example, while tobacco smoke numbs the lung's brachioles, marijuana smoke irritates them, generating the cough response *while smoking*. This expels tars from the lungs, which with tobacco smoking tend to remain trapped there, interfering with normal function (chronic tobacco smokers tend to cough *before* they light up). The Jamaica study, suppressed by the US government, found that people who smoked both tobacco and marijuana had fewer pulmonary problems than those who smoked tobacco alone.

Also notice the remark from NIDA on p. 14 that "Heavy smoking of marijuana, in quantities comparable to that of tobacco, *has been* relatively uncommon in the United States." (emphasis added) If one has accepted the previous findings, the unhappy marijuana user may soon be demanding two packs a day of THC-rich weed, rendering him or her totally out of his or her skull. In the real world, self-titration is practiced because there's only just so high a person can get.

It's important to recall also that tobacco use is addictive and compulsive, while marijuana use, while it may be habitual or chronic, and may certainly be irresponsible, *is not physically addictive*, and that "*addiction*" *has no other legitimate scientific meaning*.

Finding 10, p. 16. "THC affects eggs, sperm, sexual hormones, and the development of a fetus, and marijuana may result in deformed or undersized offspring." Hart divided this finding into two sections, "Effects on the Reproductive System" and "Effects on the Developing Fetus and Offspring".

13. Reproductive System. No epidemiological evidence is presented of any decrease in viability of pot smokers' offspring vis-a-vis non-smokers. Studies with laboratory animals are notoriously unreliable in predicting effects of substances in humans, and conditions of laboratory research are often irreproducible in real life. Human studies cited here mostly concern tobacco smoking (*see above comment on intuitive vs. actual effects*).

14. Fetal Development. Marijuana smoking is lumped with well-known adverse effects of both alcohol and tobacco, yet there seems little evidence of low birth weight babies, for example, born to women who smoked only marijuana and not tobacco, or FAS babies to women who did not drink, even though one study claimed that maternal marijuana use was "a better predictor of... FAS than alcohol use." This is simply nonsensical, but, *given the prevalence of FAS in Alaska, and Gov. and Mrs. Murkowski's campaign against it*, expect it to be an important theme of the legislative effort now at hand! It is not enough to say that studies such as those cited in 1988 "lack controls", or that "other circumstances make it hard to attribute causes", they are talking about *babies*, and we must be able to respond.

Suggestion: Propose legislation that legally regulated cannabis products carry a warning label, similar to that on some tobacco products, concerning smoking while pregnant or nursing. If there is any credible indication that marijuana smoking may cause harm to the developing child, mothers-to-be should be informed of the risks.

Note that there is no indication that eating cannabis would have potential ill effects on a fetus. Cannabis seed's essential fatty acids may benefit fetal brain development. Marijuana has a very long medical history in childbirth, as well as in other reproductive health issues of women.

Finding 11, p. 20. "Other physical reactions to marijuana include irreversible changes in the brain, sinusitis, pharyngitis, bronchitis, emphysema, increased heart rate, and decreased blood circulation." Hart divides this finding into three sections: on the brain, the pulmonary system, and the circulatory system.

15. Brain. While Dr. Heath's remarks on the difficulties of brain cell research are still applicable, new technology may have partially overcome them. While there is little likelihood of any research since 1988 demonstrating more evidence for "irreversible changes in the brain" than Hart found, this is yet another instance where language frightening to the medical layperson is deliberately employed. Its effects must be countered by showing that long-term marijuana smokers' brains *function* much as those of non-smokers. (see Russo, Mathre, Byrne, op. cit)

Also, in the discussion of alcohol's effects on the brain, this quote appears: "Other investigations suggest that the loss of certain receptors specific for a given neurotransmitter... might contribute to... complications associated with chronic ethanol usage." See Russo regarding neuroprotective effects of cannabinoids.⁷

16. Pulmonary. While there can be little dispute regarding bronchitis, pharyngitis, and laryngitis, there should be some examination of the claim of emphysema caused by marijuana smoking. I do not believe this is borne out by any research studies. (See #12 above. *Emphysema is considered to be a precursor of lung cancer; demonstration of anti-cancer effects could help neutralize this claim.*)

(Irrelevant to our purpose, but check this quote: "Until recently, chronic alcohol abuse has been a disease limited to males..." – *what dream world is this from?*)

17. Cardiovascular. Hart presents no Dispute. Seek studies demonstrating lowered blood pressure (one possible reason for cannabis' efficacy in treating glaucoma) and improved circulation.

Finding 12, p. 23. "Other psychological reactions of marijuana include loss of memory, anxiety, panic, paranoia, psychosis, psychological dependence, and impairment in thinking, reading comprehension, verbal and arithmetic problem-solving, and perception of distance and time."

18. As with the previous finding, there is no Dispute. See Russo, Mathre, Byrne, op. cit.

It is worth reading the Support and Other Considerations sections here with an eye to their subtext and effect; e.g., the statement regarding marijuana smokers "typically" being in "transition toward the use of other mind-altering substances, or... already multiple drug abusers..." Again, see Russo, Mathre, Byrne, op. cit, for useful information to counter claims such as this.

Finding 13, p. 26. "The use of even small amounts of marijuana by adults in the home subjects children to a substantial health risk." Hart limited her comment on this finding to noting its ambiguity due undefined and vague terms, and a statement from the 1983 US Surgeon General's report on effects of passive tobacco smoking. Expect similar concerns to be raised strongly in 2005 in Alaska.

It is absolutely imperative to establish that:

a) marijuana poses no serious health risks to users, and even less to exposed non-smokers; and

⁷ Russo E. Future of Cannabis and Cannabinoids in Therapeutics. Co-published simultaneously in *Journal of Cannabis Therapeutics*. 2003;3(4):163-174 and in Russo E, ed. *Cannabis: From Pariah to Prescription*. The Haworth Press, Inc; 2003:163-174.

b) alternative methods of using marijuana (eating, vaporization) can minimize risks of inadvertent exposure.

19. When the cry is raised, "*Think of the children!*", whether in regard to safety issues or health issues, if we can field few educated, respectable women leaders to counter it, we handicap ourselves significantly. It should be a priority to find women scientists, doctors and other health care professionals, *mothers* above all, to address these issues!

Finding 14, p. 26. "Marijuana and tetrahydrocannabinols (sic) have been found by the (US) Congress to possess a high potential for abuse."

20. One cannot dispute this, since marijuana is classified as a Schedule I drug. However, "A petition filed by the Coalition for Rescheduling Cannabis in 2003 cited 220 journal articles to support moving cannabis to Schedule III, drugs with accepted medical use" (*Journal of the American Medical Association*, 8/20/03). A compilation of these would no doubt be impressive.

Additional Findings

Finding b) 1, p. 27. "Patterns of marijuana use in the state have changed over the past decade." As Hart noted in 1988, an ambiguous statement. It has an effect, however: unfamiliar and uncontrolled change is often seen as bad by the general population.

Finding b) 2, p. 27. "The daily use of marijuana in (Alaska) has increased to as high as four percent among the general population and as high as six percent among secondary school students."

b) 3, p. 28. "Marijuana use in (Alaska) within both the general population and among adolescents is significantly higher than in the nation as a whole." Both of these findings apparently relied heavily on a substantially misunderstood and misused report by Dr. Bernard Segal. Hart points out that Segal's research did not investigate "daily use" of marijuana; thus, figures presented in the "finding" could not be confirmed.⁸

The chart of Segal's findings on **p. 28** is interesting for the large increase in tobacco use among Alaskan students between '82-'83 and '87! One wonders how many of those cigarette-smoking students from 20 years ago became addicted to tobacco, and how many still smoke it today? How many are in ill health due to tobacco use? How many have died? There seems to be "experimental" tobacco use, as there is with marijuana!

Finding b) 4, p. 29. "There is a direct relationship between the use of marijuana at home by adults and the percentage of secondary school students who experience disciplinary and academic problems in public schools; over the last three years in the Anchorage School District, of the 230 students who have been suspended from school for possession or use of marijuana, 29% have indicated that marijuana is used by adults in their living environment." This extraordinary statement is based, as Hart reports, upon unscientifically gathered data. No baseline exists for marijuana use in students' homes. Collection of such would violate privacy laws.

Furthermore, whatever percentage of "problem students" might be exposed to marijuana use at home, this would not establish any "relationship", direct or indirect, with the percentage of ASD students who experience problems at school, nor can any be inferred from the figures given here.

⁸ For an analysis of the Segal report, more recent figures for marijuana use, and definitions of "use" employed by different researchers, see "*The Economic Implications of Marijuana Legalization in Alaska*", online at www.ar2ak.org.

Finding b) 5, p. 30. "The changing patterns of marijuana use and the relationship between marijuana use by adults and adolescents have significantly compromised the state's legitimate efforts to prevent the spread of marijuana use to adolescents and protect (their) health..." While Hart limits her critique of this finding to noting the ambiguity of its terms, let us be quite clear: using ordinary meanings for these phrases, *the evidence fails to verify* either "changing patterns of use", a "relationship between marijuana use by adults and adolescents", or that such patterns or relationship, even if they did exist, had "significantly compromised" any "legitimate efforts" of the state. Furthermore, *the lack of any proof* of serious deleterious health effects of marijuana, coupled now with 20 years of positive and encouraging research on medical marijuana, *can severely limit the state's claim to legitimacy* in "preventing the spread of marijuana", if such claim is based on protecting kids' health.

Finding c), p. 31. "The legislature further finds there is a legitimate and compelling governmental interest, based on testimonial and scientific evidence, that the public health and welfare will suffer if personal use of marijuana even in small amounts is allowed." *See above.* It is just this conclusion which must be averted. Dr. Segal told Hart, in a personal communication quoted here, that fear of mental or physical damage were the most-cited reasons secondary students did not try, or stopped using, drugs. Illegality (fear of punishment or consequences) was next most effective. "Friends' disapproval" was least cited for stopping drug use; no other reasons are mentioned and it is unknown if others were offered.

Comment

It is reasonable to ask if a moderately-if-at-all harmful behavior which is "best" prevented by lies and threats is really worth preventing! It is also reasonable to wonder if factual, science-based, non-inflammatory information, coupled with the passage of time, might be effective in stopping drug use, especially that of the "experimental" kind.

While it may seem quixotic to insist upon science-based evidence in these creationist times, I believe it is not. Too often, efforts to present scientific findings to legislative bodies or to the public have been contorted by profit seeking, and/or mounted in terms either forbiddingly academic or insultingly simplistic. (Think of television ads for antacids, with their "diagrams" of the gastric system!) In addition, science education has declined as precipitously as the study of grammar in US schools, and the scientific method itself is under attack.

The history of cannabis' safe and varied use has been so thoroughly abducted from our awareness, hysterical lies about it have gained such widespread currency, and honest scientific research into its effects has been so hobbled, that advocates of legal regulation cannot presume any advantage in public understanding, even among supporters in a state like Alaska, where public policy on the issue has been debated for over 30 years.

Basic information on botanical and biological processes, and on relevant scientific terms and methods, must be provided in some form to legislators and to supporters. Simplified analogies must be found which resonate with legislators' experiences, without insulting supporters' level of understanding. Speakers must be confident but not arrogant; knowledgeable but not pedantic; and should strive to remain factual and focused but flexible when presenting the case for cannabis' demonstrated safety and value.

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written entirely under the brain-damaging influence of marijuana hemp