# Adapting prevention strategies in the era of marijuana legalization James Lange, Ph.D. Director, Health Promotion San Diego State University Pre-conference plenary address at the Marijuana Advocacy and Policy Summit

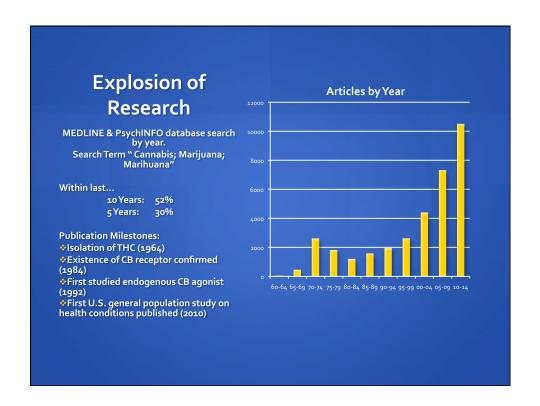
#### Looking back a few years ago...

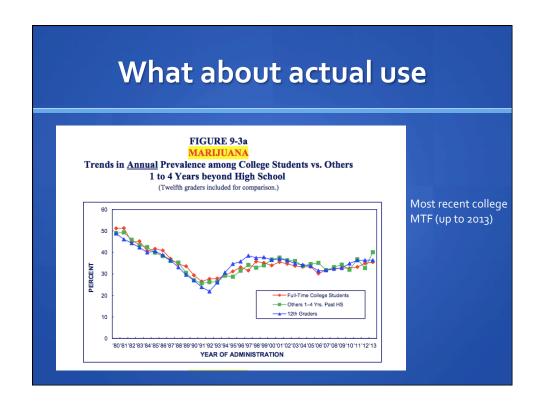
Amethyst Initiative - 2008

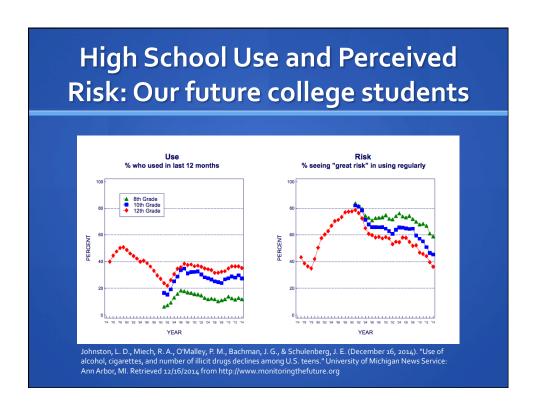
of the Drug Free Action Alliance, Columbus, Ohio. March 31, 2015

- 2010 California Prop 19 Didn't Pass, but...
  - Since 2010: 11 States and DC became medical marijuana states. It took 13 years for 13 states to start this off (1996-2009)
  - California Decriminalized in 2011
  - Washington and Colorado legalized in 2012
  - Oregon, Alaska and DC legalized in 2014









#### Predictors predict until they don't

Quotes from MTF Press Release: 12/16/14

Marijuana use, after five years of increasing among teens, actually declined slightly in 2014, with use in the prior 12 months declining from 26 percent to 24 percent for the three grades combined.

"The belief that regular marijuana use harms the user, however, continues to fall among youth, so changes in this belief do not seem to explain the change in use this year, as it has done over most of the life of the study," Johnston said.

## A bit about AOD Initiatives at SDSU

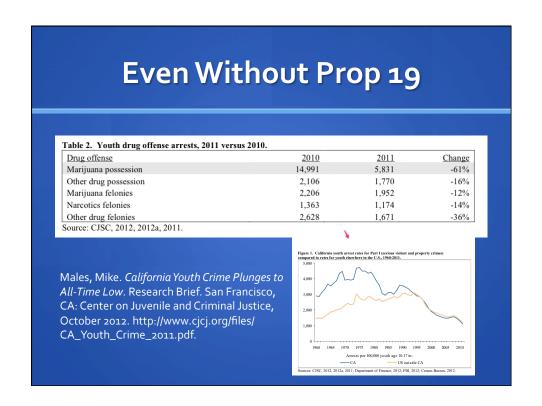
- Since implementing our Comprehensive Strategy...
  - Reduction in alcohol related medical transports
  - Reduction in alcohol related campus judicial referrals
  - Increase in Freshman claiming alcohol-abstinence
  - Have not been listed in any publications "party school" lists
- Our Aztec Nights program has been featured by the U.S. Department of Education
- We were the first (or nearly so) to publish on... Ritalin abuse in the west coast; Salvia use by college students; BAC definitions of binge drinking; the association between marijuana and binge drinking in college parties



# Where does marijuana fit within the AOD issues at SDSU?

- Drug Free Schools and Community Act requires all IHEs to certify that it has a program to prevent illicit drugs. Illicit would be defined federally.
- The CSU System has made clear that medical marijuana is not permitted on its campuses.
- SDSU Student Health Services will not recommend marijuana to students.
- Use eCheckUptoGo-Marijuana as needed.
- Policy: Grounds upon which student discipline can be based...
  Use, possession, manufacture, or distribution of illegal drugs or
  drug-related paraphernalia, (except as expressly permitted by
  law and university regulations) or the misuse of legal
  pharmaceutical drugs. SDSU does not permit the possession or
  use of marijuana even with a medical recommendation.





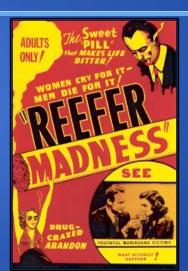
#### The Medicine

- The FDA has this to say "... has not been proven to have a positive impact"
- No peer-reviewed publication of randomized development trials showing benefits.
- Reported adverse side effects include: Psychotic behavior (hallucinations, impulsive/destructive behavior) vehicle crashes, and even suicide.

# Of course the "Medicine" here is... Tamiflu British medical journal claims there is no proof that Tamiflu can stop influenza MPLURIZA | NOVEMBER 14, 2012 | BY JEANNE STOKOWSKI-BISANTI | + Subscribe Tamiflu Coppilates To Coppulate To C

# College Students are Hypocrisy, Faux-Expert, and Bias Detectors

- We are faced with an educated, skeptical and capable group.
- The ghost of Reefer Madness is always hanging over our efforts.
- Sometimes they are right and we need to approach this with a proper sense of historical and public health understanding.
- However, like all of us, they can suffer from confirmatory biases.



#### Is this déjà vu? From a distance, it seems to be.



#### 1921 to 1933

#### ONLY 9 STATES GET BEER AS MEDICINE

Brewers Are Preparing to Supply It-Seven Plants to Open in Milwaukee.

DRYS' COUNSEL SEES HOPE

Believes People Will Resent Turning 'Drug Stores Into Booze Shops'---Rush Expected Here.

Brewers in the nine States where beer may be legally prescribed as medicine began preparations yesterday for the

ONLY 9 STATES GET BEER AS MEDICINE. (1921, October 26). The New York Times. Retrieved from http:// www.nytimes.com

#### Prohibition Nears Its Doom As 6 States Vote Today

By The Associated Press

Voters in half a dozen widely scattered states today are inscribing the answer to whether thirteen years of national prohibition shall end next month.

#### Lindberghs Forced

Back into Holland

AMSTERDAM, Nov. 7.—(R)—
Col. and Mrs. Charles A. Lindbergh returned to Holland today,
when unfavorable flying conditions
prevented them from continuing to
Geneva after a flight over Belgium
and Ffance in a heavy fog. They
hopped off this morning.
A dispatch from Geneva, where
they were expected to land shortily before nightfall, said a large
crowd had waited for them several
hours at the Nautical Club in
Geneva.

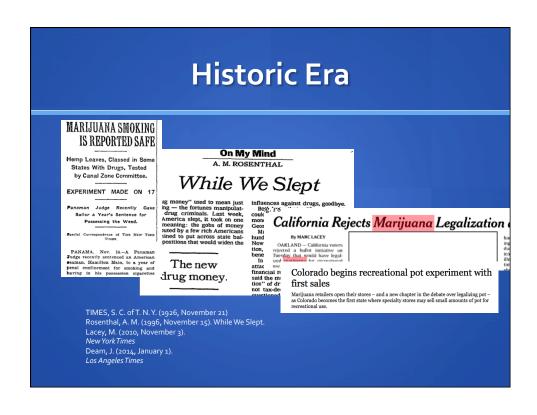
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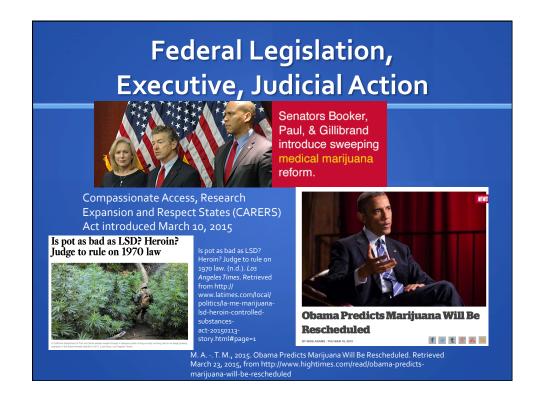
Rochester Evening Journal (1933, November 7). Retrieved July 3, 2013, from http:// news.google.com/newspapers

#### **Today**



sLkYX.jpg (JPEG Image, 640  $\times$  428 pixels). (n.d.). Retrieved July 12, 2013, from http://i.imgur.com/sLkYX.jpg





# What happens on campus if/when marijuana is de-scheduled

- ADA and fair housing may force medical marijuana on campus
- Age-21 restrictions become meaningless for medical users.
   This may also include allowing growing own.
- Smoking bans may or may not apply if focus on nicotine and tobacco. Eatables will be difficult to control.

# How to respond: Tell us how to argue...

- We must acknowledge that many of the moral and even public health oriented arguments against marijuana use are fraught with shaky foundations
  - Lung health: Cigarette analogy fails both on research-based harms and legal grounds. It also does not address other forms of consumption. Second-Hand smoke harms not studied.
  - "Medical" vs. Recreational distinction fails on epistemological grounds
  - Both Gateway Drug and Amotivational Syndrome have failed to be confirmed
  - Risk of dependence true, but legal and use guidelines are inconsistent with other drugs
  - Impaired driving is true, but legal and use guidelines are inconsistent with other drugs
  - THC-level inflations: Partially true, but public health implications have not been documented. Synthetic cannabinoids are not a model for informing this debate due to their action on CB1 and also the lack of countervailing chemicals such as CBD.

# College Population Considerations

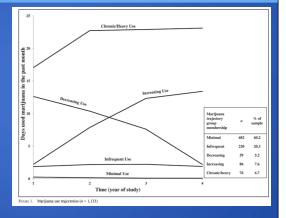
- 18-24, and sometimes much older
- Well educated, critical and have the means to do independent study
- Activated towards social change, and social justice
- Experimenting with agency, leadership and protests
- Understand concepts of relative risk. Have a much better experiential-based understanding of the set and setting of actual use.

#### Marijuana Use Trajectories

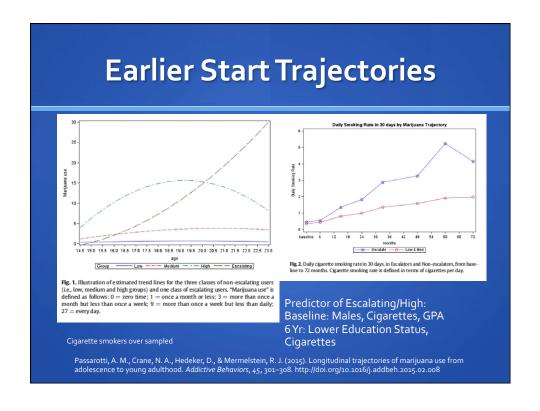
"Specifically, infrequent, increasing, and chronic/heavy marijuana use patterns were associated with significantly increased risk for discontinuous enrollment (adjusted odds ratio = 1.66, 1.74, and 1.99, respectively) compared with minimal use."

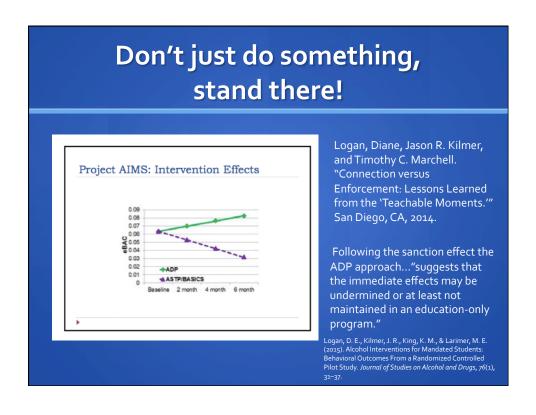
The Trajectories also correlated with use of other drugs: Alcohol, Illicit and Rx.

Reasons for discontinuous enrollment were not identified, and could include suspension, expulsion and transfer.



Arria, Amelia M, Laura M. Garnier-Dykstra, Kimberly M. Caldeira, Kathryn B. Vincent, Emily R. Winick, and Kevin E. O'Grady. "Drug Use Patterns and Continuous Enrollment in College: Results From a Longitudinal Study." Journal Of Studies On Alcohol And Drugs 74, no. 1 (2013): 71–83.





# Flexible and realistic alcohol prevention efforts

- BASICS
- ASTP
- SHAHRP
- Many Online Programs
- All these acknowledge a desired effect of alcohol, and seek to instruct the drinkers (even underage) how to maximize those, and minimize the negative.
- Implicit recognition that there is social or personal value "Consumer Surplus" to the activity that should be accepted by the prevention messaging.
- Some have argued that doing this for highly addictive substances with well documented harms (i.e., tobacco) is flawed logic (Chaloupka, Gruber, & Warner, 2015)



### Responsible Use: What is it?

Illegality made the question of "responsible use" problematic; though for alcohol this is often considered on college campus.

Medical exemption appears to be exploited; Discomfort with the ethics of "cosmetic" medicines

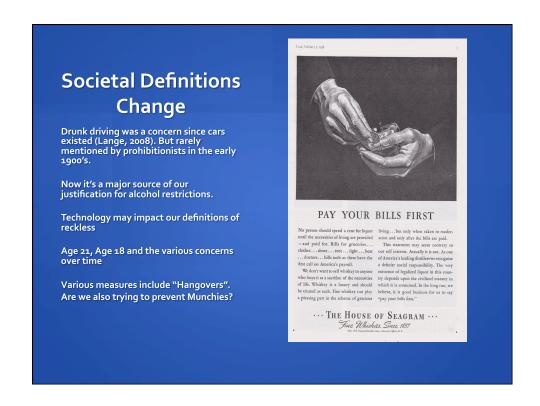
Do we agree on what abuse or irresponsible use looks like?

A moving target and often based on socially constructed sense of "problems" Gusfield (1996)



Question: "Any plans to do a "Baked History" where pot is legal? GREAT SHOW!" no way. That show would never end. It would be boring and very slow. Trust me.

lamA (Derek Waters, Creator of Drunk History) AMA! (2014). Retrieved March 26, 2015, from http://interviewly.com/i/derek-waters-jul-2014-reddit





#### DEA "Abuse" vs. DSM "Abuse"

- Abuse: "When drugs are used in a manner or amount inconsistent with the medical or social patterns of a culture." (p.32 DEA, 2011)
- DEA Working\* Definition of <u>Potential for Abuse</u>:
  - Taking the drug in amounts that create hazard to health and
  - Significant diversion from legitimate drug channels.
  - Taking on own accord.
- Drugs are abused to "alter mood, thought, and feeling."
- "The 'feel good' effects of the drugs contribute to their abuse."

\*Abuse not defined within CSA.

DEA. (2011). Drugs of Abuse: A resource guide. Drug Enforcement Administration, U.S. Department of Justice.

#### Ethical discomfort with "Cosmetic psychopharmacology"

the growing power to manage our mental lives pharmacologically threatens our happiness by estranging us not only from the world but also from the sentiments, passions, and qualities of mind and character that enable us to live in it

The medicalization of psychic pain, however necessary as a path to providing much needed relief for the sick, indicates (whether intended or not) a great advance for biological reductionism against the citadel of mind and soul, a march well ... mood altering drugs pose a fundamental danger to our pursuit of happiness. ... What is to be particularly feared about the increasingly common and casual use of mind-altering drugs, then, is ... that they will seduce us into resting content with a shallow and factitious happiness. (pp. 303–5)

- President's Council on Bioethics (2003):
- Criticism (Cerullo, 2006) includes better description of SSRIs as not moodbrighteners; Disputes the literal suggestion pain is necessary for dignity and "soul".
- Today's Council (2014) discusses neurological enhancements as creating concerns of equity and access. Differentiation between right to treatment vs. access to enhancements
- Ultimately, these ethical questions seem to devolve quickly when comparing marijuana to other approved medicines/drugs like Viagra, caffeine, birth control.

# Institutional definition of medicine

Often rests on FDA approval, and medical consensus to define a substance as "medicine".

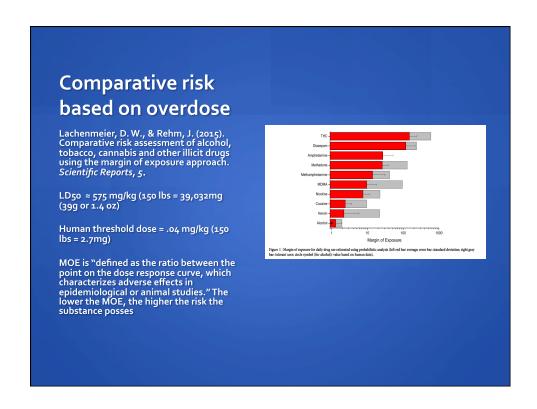
Roots run deep in counter narcotic, prohibition and Patent Medicines

Long tradition of cultural acceptance of alternative remedies

Sometimes medication "works" without our clear understanding of why. SSRI/Depression example (Anderson et al, 2015)



# Consumption quantities Alcohol example Age 21 No Binge (5/4) Weekly limit 14/7 Opposite of Responsible Reckless - fights, noise, crashes, sexual assaults and other crimes Harmful – Long term health effects, addiction, relational impacts Our quantity measures tend to focus on "Reckless" consequences, while Frequency tend to "harmful" consequences. What if the user avoids these? Are they then "Responsible?" Wechsler, H., Dowdall, G. W., Davenport, A., & Rimm, E. B. (1995). A gender-specific measure of binge drinking among college students. Am J Public Health, 85(7), 982–985.



#### **Impaired Driving**

#### **Issues:**

- Awareness
- Effective enforcement strategies
- Legal constraints and opportunities
- Legalized on-sale consumption
- Promotion solutions: What's possible?

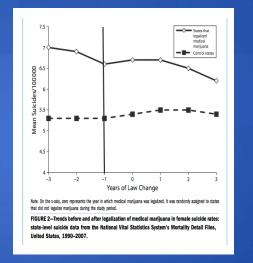
#### Suicide: Possible Reckless or Harmful crossover

Conflicting evidence:

Legalization effect on suicide rates. Significant for men ages 20-29.

But news reports of incidents of apparently intoxication related suicide.

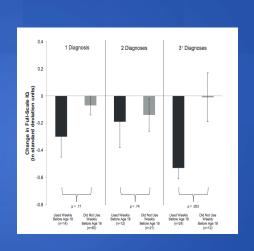
Role of setting and access to weapons not investigated.



Anderson, D. M., Rees, D. I., & Sabia, J. J. (2014). Medical Marijuana Laws and Suicides by Gender and Age. American Journal of Public Health.

# Harmful: How many IQ Points do you lose?

- •N=1,037
- •Use at 18, 21, 26, 32, 38
- •IQ at 18, 38
- •8 pt drop only for the 24 subjects who initiated before 18, were judged dependent 3 times within the 20 years compared with the 12 subjects who did not start before 18, but still judged dependent.



Meier, M. H., Caspi, A., Ambler, A., Harrington, H., Houts, R., Keefe, R. S. E., ... Moffitt, T. E. (2012). Persistent cannabis users show neuropsychological decline from childhood to midlife. *Proceedings of the National Academy of Sciences*, 109(40), E2657–E2664.

#### **Brain Development** and Cannabis

Development likely continues at least until age 25

Cross sectional studies found both alcohol binge and marijuana use predictive of white matter integrity in fronto-parietal tracts.

Only a few longitudinal studies. One found alcohol effects. But the authors state "Deleterious the authors state "Deleterious effects might be more attributable to binge drinking than marijuana, as preliminary studies suggest that cannabis may have a less effect ...and may actually serve a neuroprotective role in attenuating...heavy alcohol use.

Note that a non-alcohol-bingeing marijuana-using teen is almost non-existent

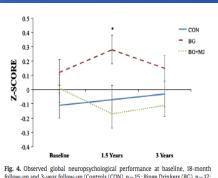


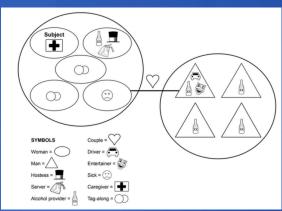
Fig. 4. Observed global neuropsychological performance at baseline, 18-month follow-up and 3-year follow-up (Controls (CON), n=15; Binge Drinkers (BG), n=17; Binge Drinkers with Heavy Marijuana Use (BG+MJ), n=19). \*p<0.01.

"However, it remains surprising that our marijuana users do not show a marked decrease in tissue integrity compared to the binge drinkers given

Jacobus, J., Squeglia, L. M., Bava, S., & Tapert, S. F. (2013). White matter characterization of adolescent binge drinking with and without co-occurring marijuana use: A 3-year investigation. *Psychiatry Research: Neuroimaging*, 214(3), 374—

#### **Social Context**

- Source of benefits, protection, and risks
- We know, or at least have documented, very little about the social context of marijuana use.
- Context will change in legalized environment.



Lange, J. E., Devos-Comby, L., Moore,, R.S., Daniel, J., and Homer, K. "Collegiate Natural Drinking Groups: Characteristics, Structure, and Processes." *Addiction Research & Theory* 19, no. 4 (August 2011):



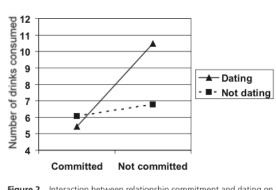


Figure 2 Interaction between relationship commitment and dating on alcohol consumption in the natural drinking group, controlling for gender.

Devos-Comby, Loraine, Jason Daniel, and James E. Lange. "Alcohol Consumption, Dating Relationships, and Preliminary Sexual Outcomes in Collegiate Natural Drinking Groups." *Journal of Applied Social Psychology* 43, no. 12 (2013)

#### So what do we say on college campuses? Consider these issues:

- 1. It's illegal and against campus policy. There is no age variance on this.
- 2. Since almost all are over 18, therefore most of the research on early onset does not apply
- 3. Discontinuity of enrollment is 6. High dose and especially oral a risk, but unclear at what level of use
- 4. Regular use (definition likely will fall somewhere between weekly and daily) is associated

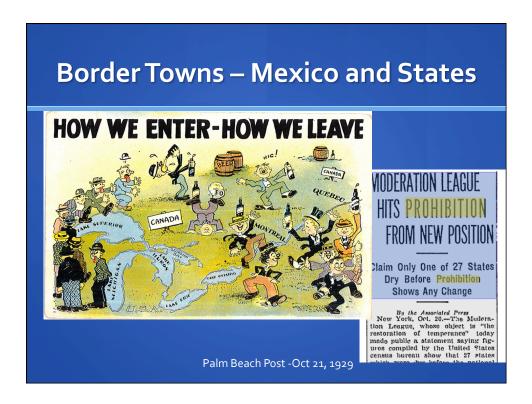
with more problems.

- 5. Occasional use can be safer if not associated with:
  - 1. Driving
  - 2. Other substances including alcohol and tobacco
- use may prolong impairments substantially
- 7. And most importantly, any or all of this is subject to change at any moment

#### Various Directions

- Motivational Interviewing approaches appear to reduce use and problems.
- Argumentative and counter marketing approaches are not appearing to reduce use. These often rely on abstinence-only approach that may not be adaptable to legalized environments.
- Information campaign to change the views on driving may be warranted. Roadside survey found marijuana common (7.4%).
   Only 11% thought it harmed their driving. (Lacey et al, 2012).
- Promotion instead of Prevention messaging to avoid internal counter-arguing.

#### **Clinical Aspect** Changes to DSM California Youth Crime Plunges to All-Time Low DSM V removes legal By Mike Males, Ph.D., CJCJ Senior Research Fellow consequences as diagnosis criteria. New figures for 2011 released by the California Department of Justice's Criminal Justice Statistics Center (CJSC, 2012) show arrests of youths under age 18 fell by 20% from 2010 to Legal contact as an identifier/ Referral Brief COUNSELING for MARIJUANA DEPENDENCE Motivation for treatment in a A Manual for Treating Adults de-stigmatized social environment. 2 of the 3 examples related to stigmatized use as the main problem. **XSAMHSA**



# Local Sales Restrictions: Is there a model yet?

- Perhaps a conditional use permit model for local restrictions; some things to think about:
  - No on-premise use-Since there is no unimpaired use level, on-premise responsible sales will necessarily lead to intoxication.
  - No per-hit sales.





#### Suggestions Cont.

- No concurrent alcohol sales-Restricts the growth of industry.

  Also recognizes the synergistic effect on impairment
- Support tools for enforcement and data collection
- California's medical legalization without regulated sales has lead to an extremely ad hoc and chaotic system.

"California has a very mature marijuana industry and it's just not regulated," ... "We're the worst of all worlds. This report bears out the fact that we haven't answered a lot of questions."

"Why California Is The 'Worst Of All Worlds' When It Comes To Marijuana." The Huffington Post. Accessed March 29, 2015, http://www.huffingtonpost.com/ 2015/03/27/apvin-newsom-marijuana n 6seszeo, btml.

#### Things that worry me

- Delivery services
- THC-based eatables and drinkables – Detection, overdose and accidental use
- Campus anti-vape policy weakness
- Sudden changes in federal law or legal interpretation
- Impaired driving
- High frequency off-campus users



# Other Strange Directions with Continued Fed/State Conflict

- Drop Boxes: Federal law is guiding us, but there is apparently tolerance for an amnesty and disposal approach.
- Legislative restrictions on resources for enforcement
- Schedule II Effects. Does this trigger ADA and Fair Housing Accommodations. Does it remove medical use from DFSCA restrictions?



Springs Airport Installing Amnesty Boxes For Pot Surrender. Retrieved January 15, 2014, from http://www.kktv.com/home/ headlines/Springs-Airport-Installing-Amnesty-Boxes-For-Pot-Surrender-240261661.html



### "Audiences know what to expect, and that is all they are prepared to believe in."

-The Player: Rosencrantz and Guildenstern are Dead.

- I've been accused of smirking when I say "medical." I am almost always accused by someone in the audience of having a "bias", though the direction of bias seems to reflect more on the listener... there is only so much I can do.
- Remember that students are on guard to rebut any attempt to dissuade use. They'll see Reefer Madness hidden behind any negative health claim.
- MI approach: "'The Good' and the 'Not So Good effects."'-Jason Kilmer and colleagues

