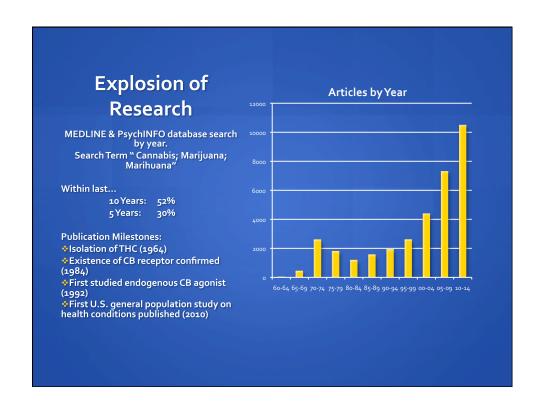
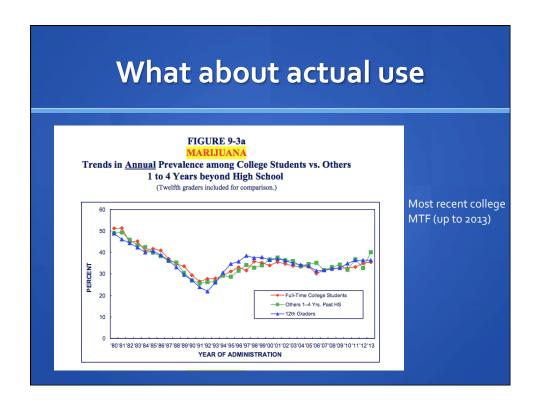


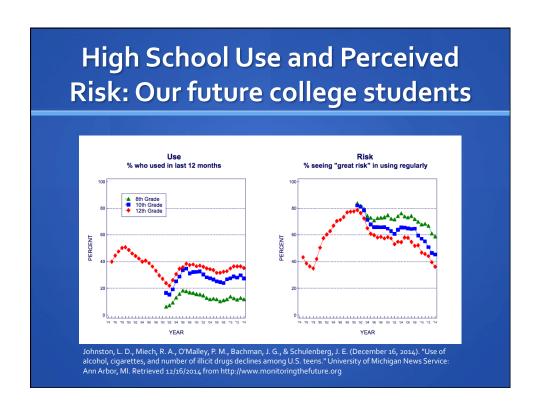
#### Looking back a few years ago...

- Amethyst Initiative 2008
- 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

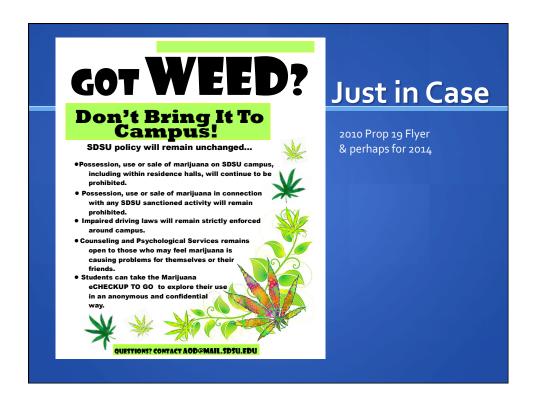
Quotes from MTF Press Release: 12/16/14

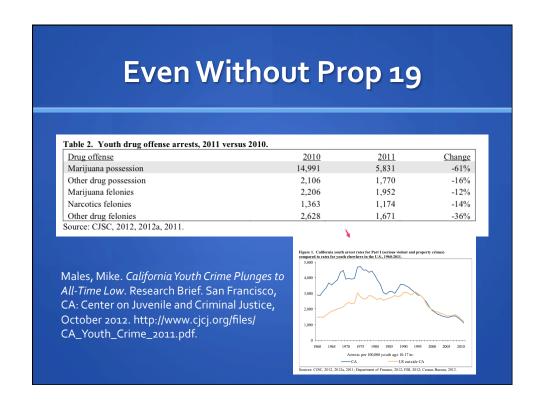
Marijuana use, after five years of increasing among teens, actually declined slightly in 2014, with use in the prior 12 months declining from 26 percent to 24 percent for the three grades combined.

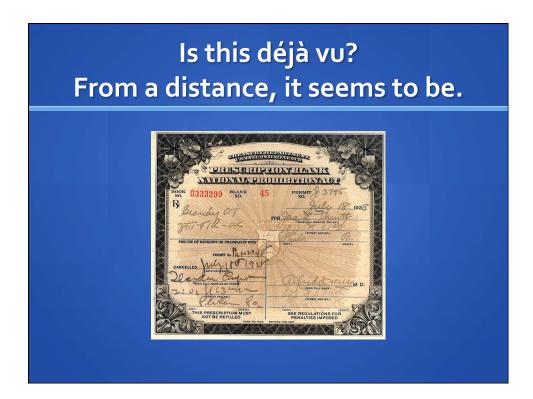
"The belief that regular marijuana use harms the user, however, continues to fall among youth, so changes in this belief do not seem to explain the change in use this year, as it has done over most of the life of the study," Johnston said.

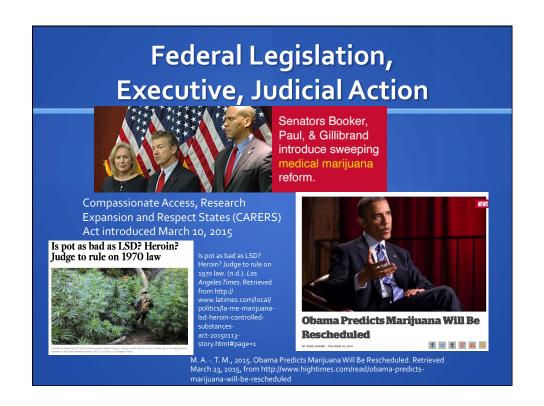
## Where does marijuana fit within the AOD issues at SDSU?

- 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.









# 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.

#### 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...

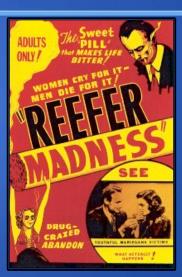
#### Tamiflu

British medical journal claims there is no proof that Tamiflu can stop influenza



## 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.



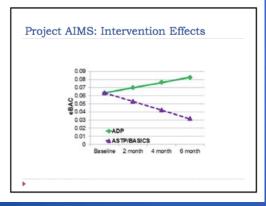
## How to respond: Tell us how to argue...

- 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.

#### Don't just do something, stand there!



Logan, Diane, Jason R. Kilmer, and Timothy C. Marchell. "Connection versus Enforcement: Lessons Learned from the 'Teachable Moments.'" San Diego, CA, 2014.

Following the sanction effect the ADP approach..."suggests that the immediate effects may be undermined or at least not maintained in an education-only program."

Logan, D. E., Kilmer, J. R., King, K. M., & Larimer, M. E. (2015). Alcohol Interventions for Mandated Students: Behavioral Outcomes From a Randomized Controlled Pilot Study. *Journal of Studies on Alcohol and Drugs*, 76(1), 32–37.

# 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)





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-

#### **Societal Definitions** Change

Drunk driving was a concern since cars existed (Lange, 2008). But rarely mentioned by prohibitionists in the early

Now it's a major source of our justification for alcohol restrictions.

Technology may impact our definitions of

Age 21, Age 18 and the various concerns over time

Various measures include "Hangovers". Are we also trying to prevent Munchies?



No person should speed a cent for liquor until the necessities of living are provided attorn and only after the bills are paid.

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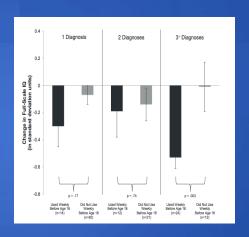
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· · · THE HOUSE OF SEAGRAM · · · Fine Whiskies Since 1857

# 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.



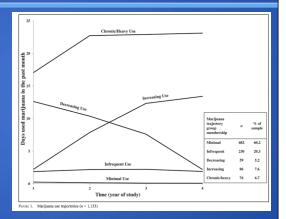
Meier, M. H., Caspi, A., Ambler, A., Harrington, H., Houts, R., Keefe, R. S. E., ... Moffitt, T. E. (2012). Persistent cannabis users show neuropsychological decline from childhood to midlife. *Proceedings of the National Academy of Sciences*, 109(40), E2657–E2664.

#### Marijuana Use Trajectories

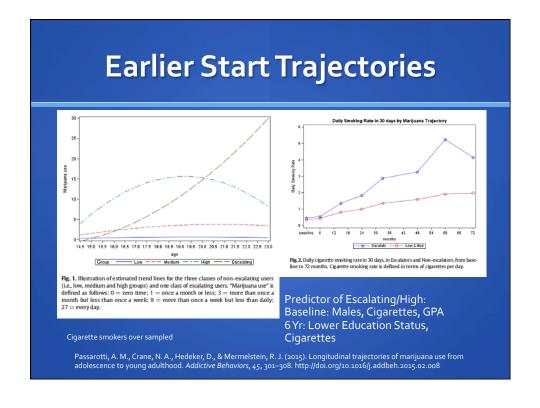
"Specifically, infrequent, increasing, and chronic/heavy marijuana use patterns were associated with significantly increased risk for discontinuous enrollment (adjusted odds ratio = 1.66, 1.74, and 1.99, respectively) compared with minimal use."

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.



## Education: A Twin Study

Grant, Julia D., Jeffrey F. Scherrer, Michael T.
Lynskey, Arpana Agrawal, Alexis E. Duncan, Jon
Randolph Haber, Andrew C. Heath, and Kathleen K.
Bucholz. "Associations of Alcohol, Nicotine,
Cannabis, and Drug Use/Dependence with
Educational Attainment: Evidence from CotwinControl Analyses." Alcoholism: Clinical and
Experimental Research 36, no. 8 (August 1, 2012)

Table 4. Unadjusted and Adjusted Conditional Logistic Regression Results: Likelihood (ORs and 95% Cls) of the At-Risk Twin (Based on Substance Use History) Having Lower Educational Attainment than His Cotwin<sup>a</sup>

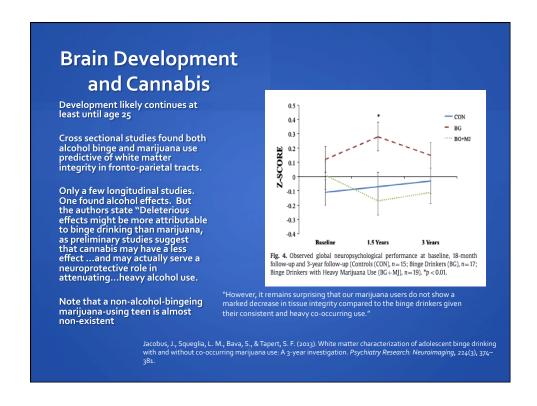
Predictor	Number of discordant pairs	Unadjusted conditional odds ratio	Adjusted conditional odds ratio <sup>b</sup>	
Early drinker	889	1.47 (1.05 to 2.05)	1.44 (1.02 to 2.05)	
Daily nicotine use <sup>c</sup>	702	2.42 (1.50 to 3.89)	2.54 (1.55 to 4.17)	
Early cannabis use	276	1.32 (0.76 to 2.29)	1.35 (0.76 to 2.41)	
Cannabis initiation	947	0.86 (0.64 to 1.16)	0.90 (0.65 to 1.24)	
Alcohol dependence	1,023	1.67 (1.24 to 2.25)	1.76 (1.27 to 2.44	
Nicotine dependence	1,059	1.34 (1.00 to 1.80)	1.31 (0.98 to 1.77	
Cannabis dependence	282	0.93 (0.56 to 1.56)	0.93 (0.48 to 1.78	
Any illicit drug dependence	379	1.39 (0.89 to 2.18)	1.23 (0.72 to 2.09)	

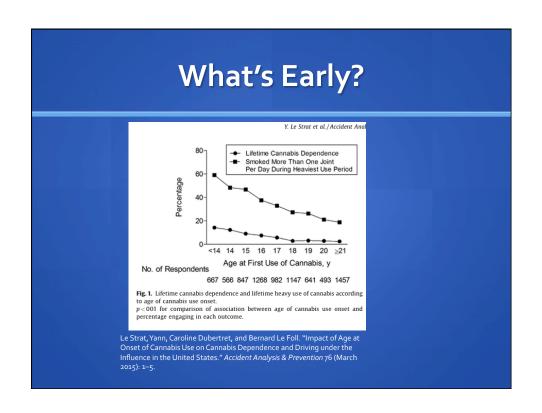
<sup>a</sup>The only significant interaction between zygosity and risk behavior was for daily nicotine use in the adjusted model ( $\rho=0.04$ ; all others  $\rho>0.20$ ), conditional logistic regression analyses were collapsed across zygosity for all measures except daily nicotine use (for which the interaction was retained in both the unadjusted and adjusted models).

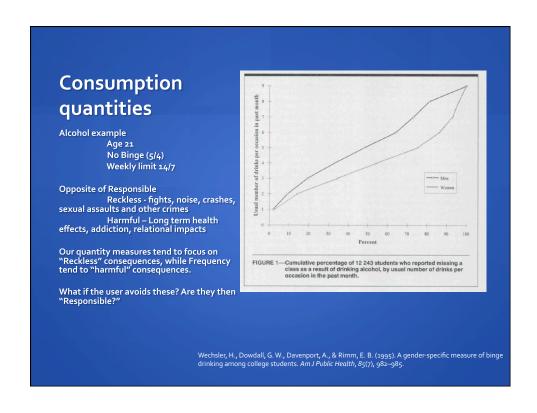
<sup>b</sup>All adjusted models included 4 covariates; depression, conduct dis-

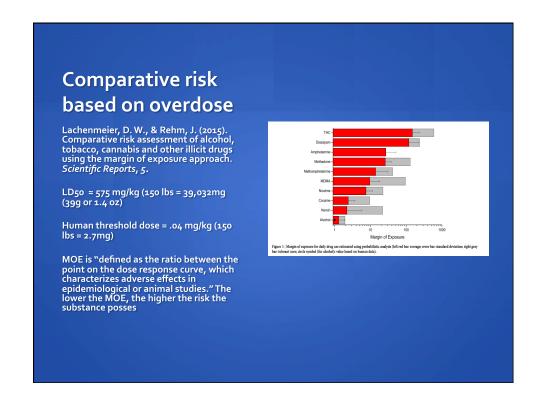
 $^{\rm o}$ All adjusted models included 4 covariates: depression, conduct disorder, Southeast Asia service, and posttraumatic stress disorder; no covariates were significant at  $\rho$  < 0.05.  $^{\rm c}$ Interaction OR = 0.51 (0.25 to 1.04) in the unadjusted model and 0.46

°Interaction OR = 0.51 (0.25 to 1.04) in the unadjusted model and 0.40 (0.22 to 0.97) in the adjusted model. Bold text indicates significant at p < 0.05.









## What's too frequent?

Table IV. Accuracy predicting at least one harm from use in past 12 months  $(n = 881)^a$ .

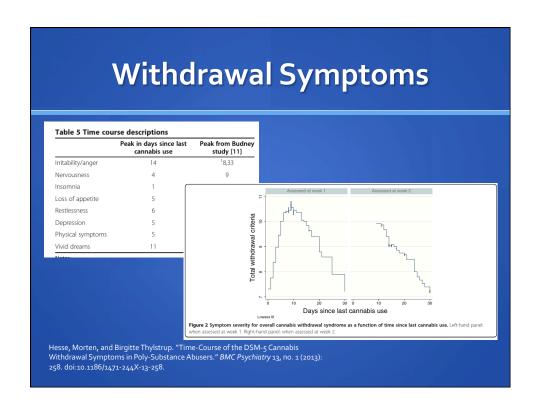
	Cannabis use daily	CUDIT6+	CUDIT8+	ASSIST4+	ASSIST8+
Sensitivity (%)	38.7	63.0	47.9	81.5	68.9
Specificity	80.8	82.9	89.3	46.5	77.2
AUC	59.8	73.0	68.6	64.1	73.1
PPV	24.5	37.3	41.9	19.7	32.7
NPV	89.1	93.3	91.4	94.0	93.9
Efficiency	75.0	80.1	83.5	51.3	76.0

Note: <sup>a</sup>Among past 3-month cannabis users who reported no other illicit drug use in the past 12 months (participants who indicated past 12-month use of cocaine, speed, methamphetamine, ecstasy, or hallucinogens were excluded).

Thake, Jennifer, and Christopher G. Davis. "Assessing Problematic Cannabis Use." *Addiction Research & Theory* 19, no. 5 (October 2011): 448–58. - (1179 Canadian Adult Last 3-month Users)

#### **Recommendations for Driving**

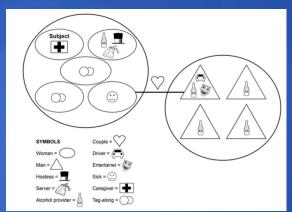
- Still very much an open question:
  - Some advocate zero tolerance
- Others look for an impairment per se level
  - per se limit set at 7-10 ng/mL. WA has set it at 5 ng/ml. Note that some talk of whole blood, others plasma. All per se discussions at this time involve THC.
  - Advise users to wait 3 (though some say 3-5) hours before driving.
  - Drivers should not mix even low amounts of alcohol with cannabis.





#### **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):

#### 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, 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.

#### **Good and Not So Good**

Find the meaningful issues



- Understand their causes
- Consider the strategies to promote the positives and prevent the harms
- Gain permission for helping and facilitate change talk





## "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

