

Substance Use Disorder: **the Science, Stigma, and Struggle**

- Please read the materials at your seat
- Participation:
 - **UNE students only**
 - voluntary & anonymous
- Those who complete BOTH pre & post surveys will be eligible to receive a \$15 gift card

Thank you!

Agenda

Brief Introduction/Epidemiology
Theories of addiction



Biological

- Reward pathway
- Allostasis/homeostasis



Psychosocial

- ACEs
- Relapse
- Triggers & Recovery



Panel Discussion

Objectives

- Describe the epidemiology of SUD
- Describe biological & psychosocial theories behind SUD
- Explain the impact of ACEs on SUD
- Recognize relapse as a normal & expected part of recovery

What comes to mind when
someone mentions substance use
disorders?

The Normalization of Alcohol

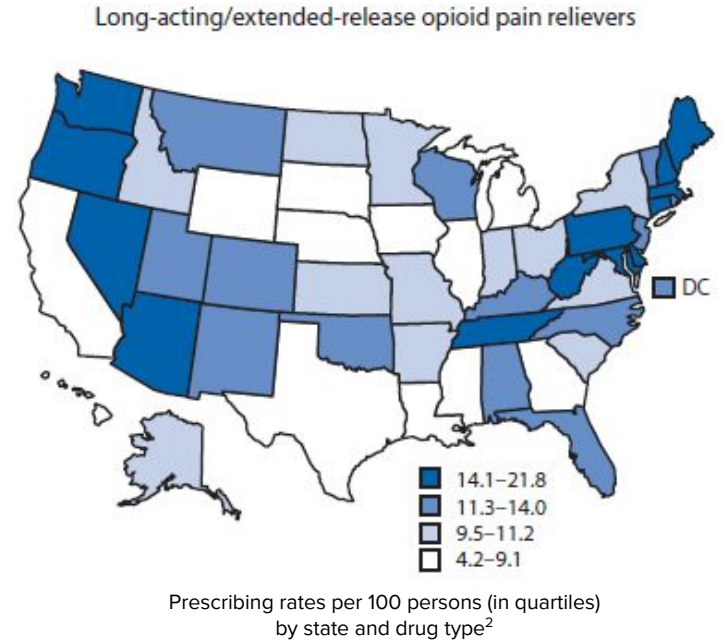
- #1 misused substance¹
- Alcohol is a contributor in 200+ diseases²
- 4th leading cause of *preventable* death²
- Men ~ 2 times as likely to die of alcohol-induced causes²
- Alcohol withdrawal is life threatening¹



1. Teter C. University of New England. Substances of Abuse. 2014.
2. Alcohol Facts and Statistics. National Institute on Alcohol Abuse and Alcoholism.
<https://pubs.niaaa.nih.gov/publications/AlcoholFacts&Stats/AlcoholFacts&Stats.pdf>. Accessed March 20, 2017

Our Opioid Epidemic

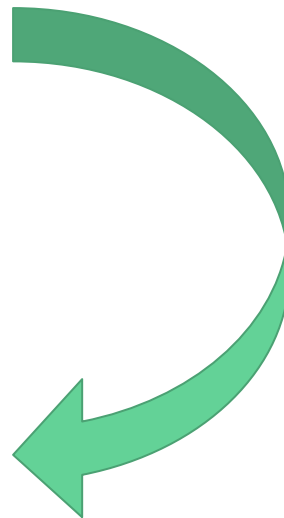
- Commonly prescribed inappropriately
- Doses > 100 MME per day increases OD risk 8.9 fold¹
- > 1 OD death per day in Maine²
- Maine has the highest prescribing rate of LA opioids in the United States³



1. Dunn KM, Saunders KW, Rutter CM, et al. Overdose and prescribed opioids: Associations among chronic non-cancer patients. *Ann Intern Med* 2010;152(2):85-92.
2. Morbidity and Mortality Weekly Report, Centers for Disease Control and Prevention 2014. <http://www.cdph.ca.gov/pubsforms/Pubs/OWH-AdolHealthReport09.pdf>. Accessed March 5, 2017.
3. Shepherd M. A deadly record: Maine averaged more than an overdose death per day in 2016. *Bangor Daily News*. February 2, 2017.

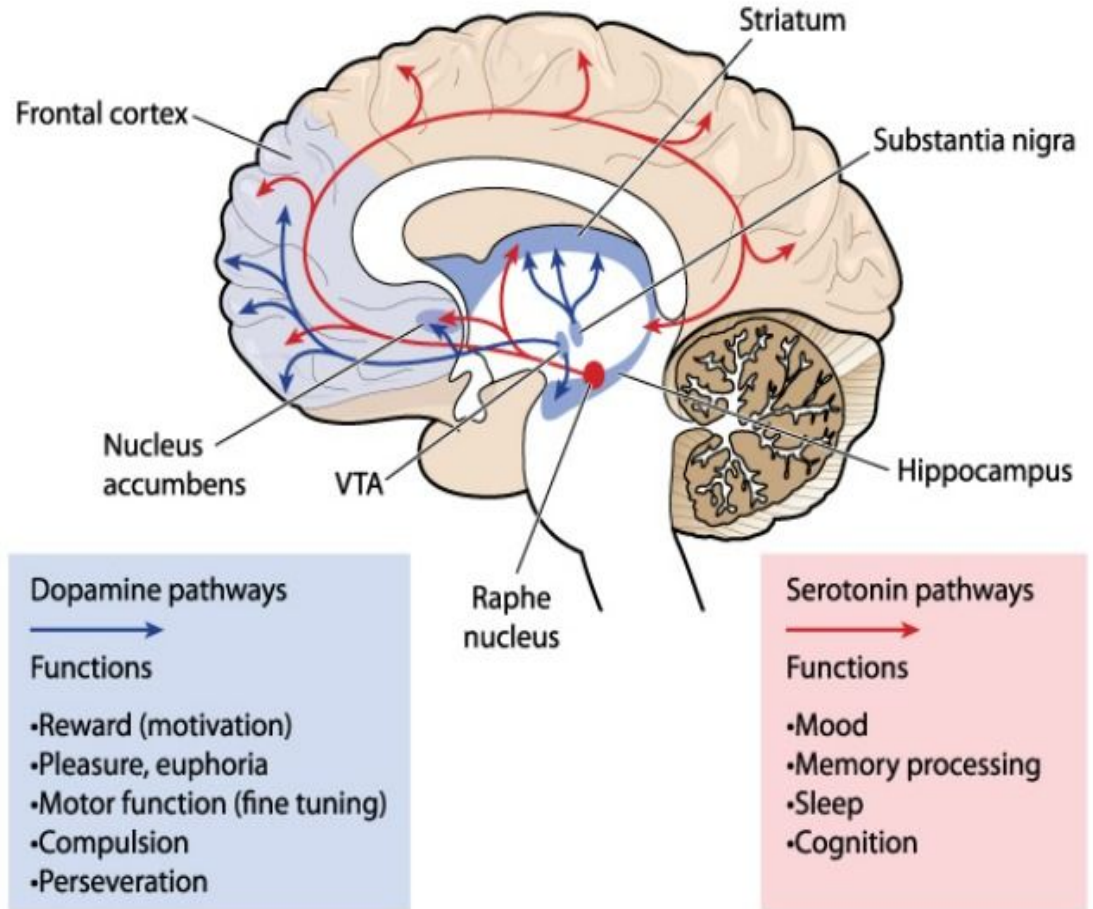
Theories of Substance Use Disorders (*examples*)

- Biologic Theories (*overlap with many other theories*)
 - Genetics
- Automatic Processing
 - Learned response
 - Conditioning
- Reflective Choice
 - “Rational” vs. “Biased” choice
- Goal directed
 - Positive and negative reinforcement
 - Self-medication (aka, pre-existing need)
- Integrated Theories



Reward Pathway Theory

- Biologic models of addiction
- Example: positive reinforcement

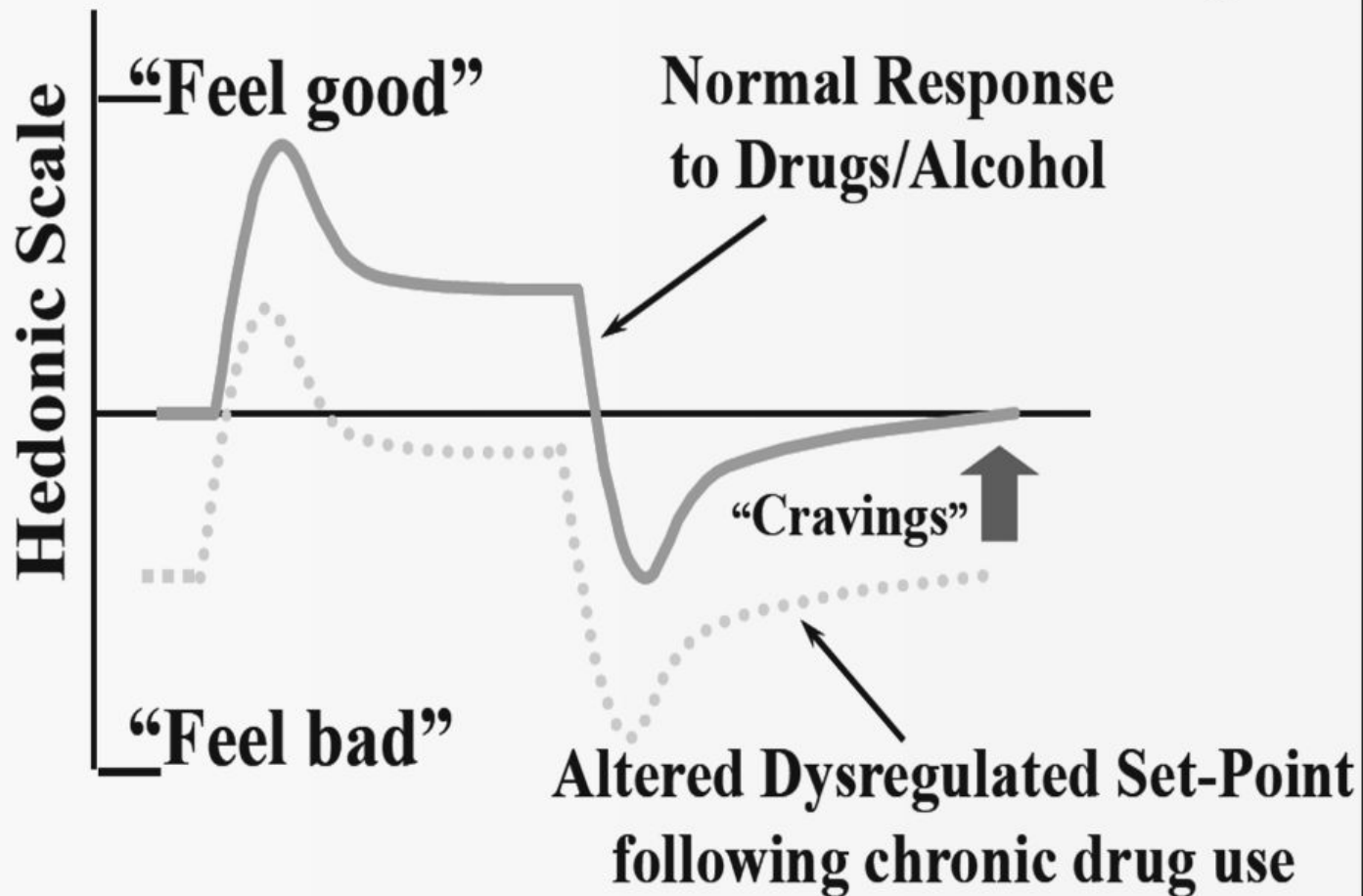


Beyond the Reward Pathway

Proposed Stages (*impulsivity to compulsivity*):

1. Binge/Intoxication Stage
 - a. Example: positive reward
2. Withdrawal/Negative Affect Stage
 - a. Motivational withdrawal or anhedonia
 - b. Includes: dysphoria, distress, sleep disturbance
3. Anticipation (craving) Stage
 - a. Rewiring of reward pathway and memory circuitry

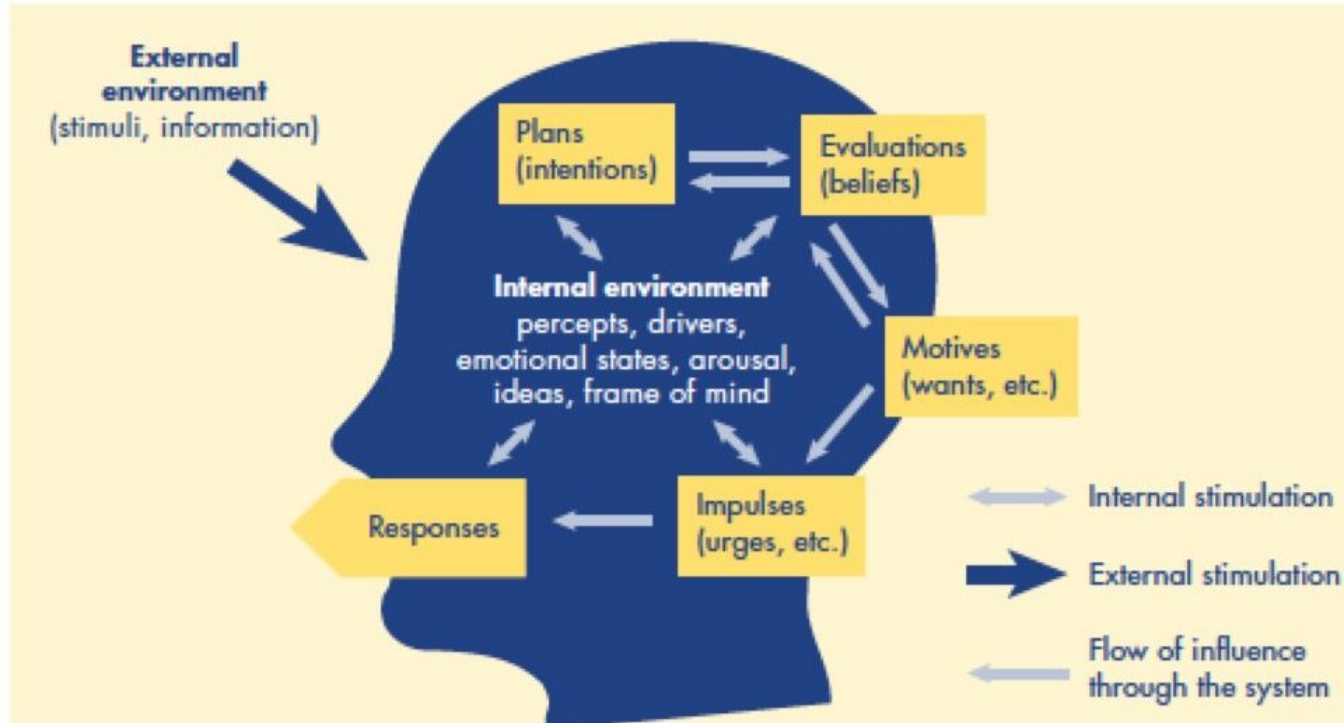
Hedonic Set Point is Altered with Chronic Drug Use



Teter C. University of New England. Substances of Abuse. Spring 2014.

Adapted from: Koob (2008).

Integrated Theory (complex interplay)



Source: Adapted from:
European Monitoring Centre
for Drugs and Drug
Addiction, 2013

What might put someone at risk
for substance use disorder(s)?

Risk Factors

- Male
- Age (18-25)
- Family History
- Childhood Trauma
- Mental Illness ~ 50% co-occurrence



Teter C. University of New England. Substances of Abuse. 2014.
Substance Abuse and Mental Health Services Administration, Results from the 2014 National
Survey on Drug Use and Health: Mental Health Findings, NSDUH Series H-50, HHS Publication No.
(SMA) 15-4927. Rockville, MD: Substance Abuse and Mental Health Services Administration. (2015).

ACES: Adverse Childhood Experiences

1995-1997

Over 17,000 HMO members surveyed to explore the correlation between adverse childhood experiences and health outcomes over their lifetime.



Dr Vincent Felitti



Dr Robert Anda

ACES Too High

<https://acestoohigh.com/2012/10/03/the-adverse-childhood-experiences-study-the-largest-most-important-public-health-study-you-never-heard-of-began-in-an-obesity-clinic/>

What are the ACEs?

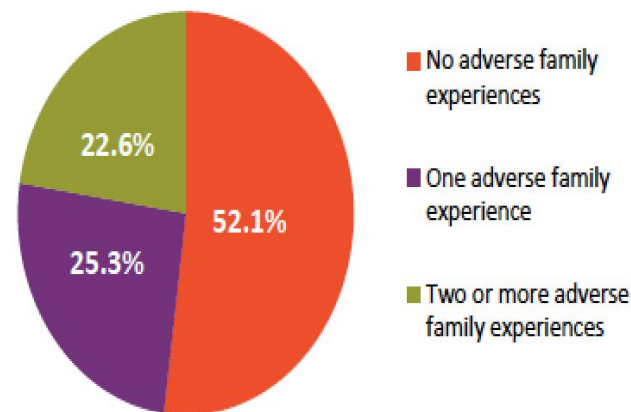
1. Physical Abuse
2. Emotional Abuse
3. Sexual Abuse
4. Physical Neglect
5. Emotional Neglect
6. Substance Misuse in the home
7. Mental Illness in the home
8. Divorce/Separation
9. Mother Treated Violently
10. A household member being sentenced to prison

ACE Results:

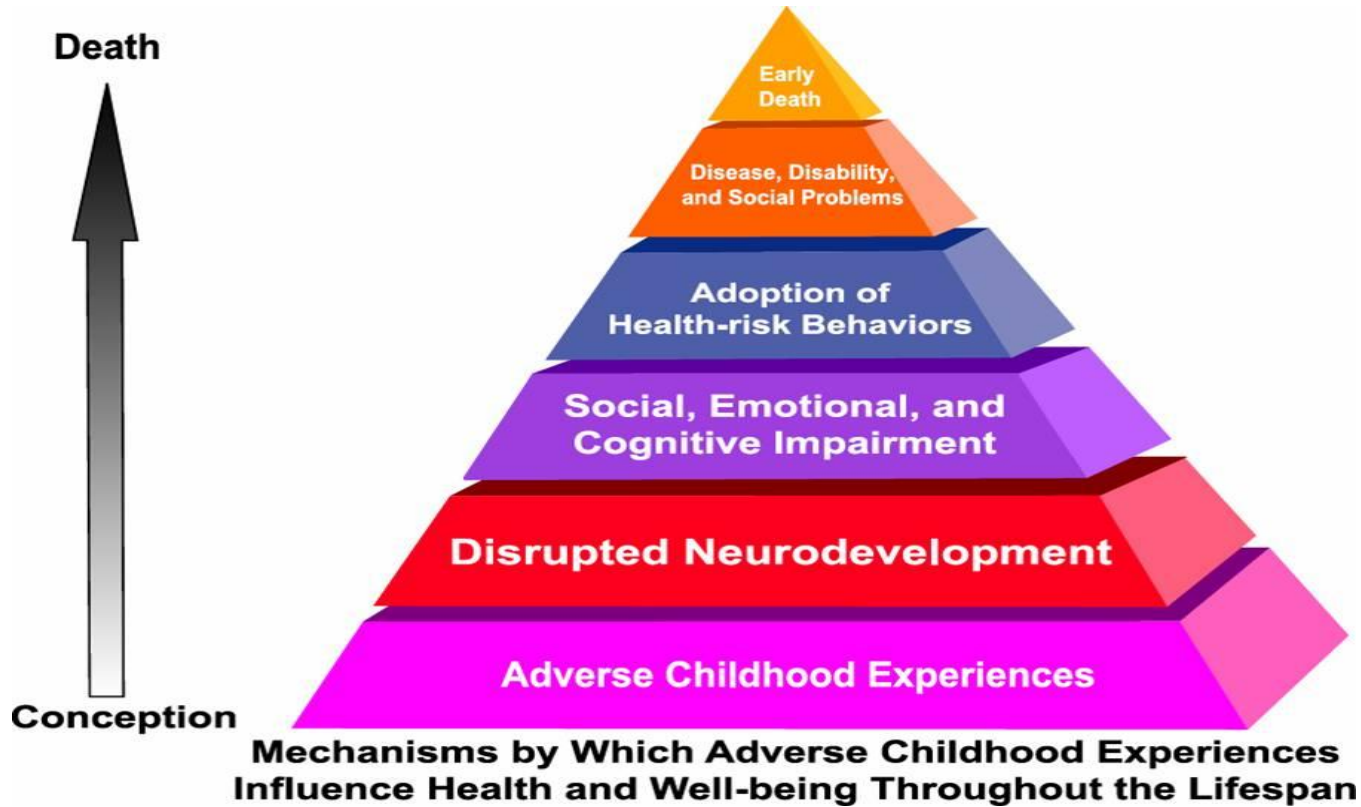
1995-1997:

- 52% had experienced 1 ACE.
- 6.2% had experienced 4 or more ACEs.

Figure 1. Prevalence of Adverse Child and Family Experiences among US Children Age 0-17 years



Source: 2011/12 NSCH



With 4+ ACEs, health risks increase significantly



- 2 x more likely to smoke
- 12 x more likely to have attempted suicide
- 7 x more likely to be addicted to alcohol
- 10 x more likely to have used IV drugs

ACES Too High

<https://acestoohigh.com/2012/10/03/the-adverse-childhood-experiences-study-the-largest-most-important-public-health-study-you-never-heard-of-began-in-an-obesity-clinic/>

ACEs Increase Risk

- Mental Illness (depression, anxiety, psychosis, etc.)
- Chronic Disease & Disability
- SUD (alcohol, tobacco, prescription & illicit drugs, etc.)
- Unsafe Sexual Practices
- Contraction of HIV
- Intimate Partner Violence
- Sexual Violence
- Homelessness
- Reduction in Life Expectancy



ACES Too High

<https://acestoohigh.com/2012/10/03/the-adverse-childhood-experiences-study-the-largest-most-important-public-health-study-you-never-heard-of-began-in-an-obesity-clinic/>

Finish this statement:

Relapse is.....

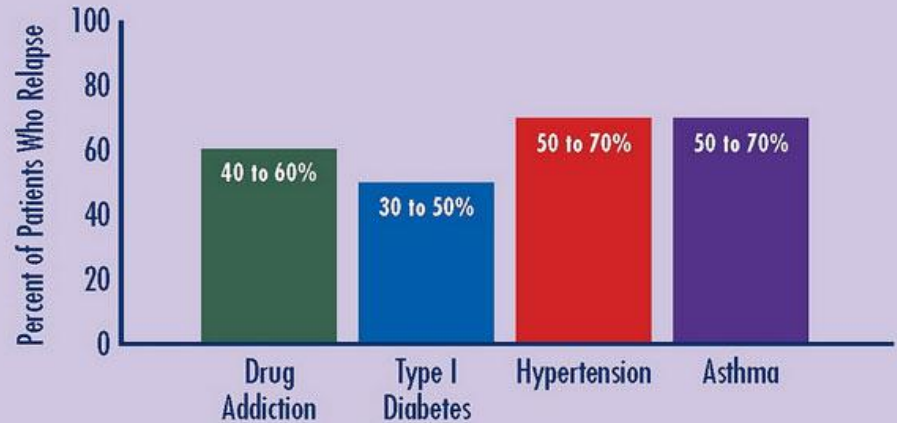


True or False: People with SUDs relapse at a higher rate than others with chronic lifestyle illness?

The Science of Relapse

- **Relapse is not treatment failure. It is a normal and expected part of recovery process.**
- Relapse is NOT a choice or sign of weakness
- Discontinuing services due to relapse increases risk of continued use, health risk, and OD

COMPARISON OF RELAPSE RATES BETWEEN
DRUG ADDICTION AND OTHER CHRONIC ILLNESSES



Relapse rates for drug-addicted patients are compared with those suffering from diabetes, hypertension, and asthma. Relapse is common and similar across these illnesses (as is adherence to medication). Thus, drug addiction should be treated like any other chronic illness, with relapse serving as a trigger for renewed intervention.

Source: McLellan et al., JAMA, 2000.

The Science of Relapse



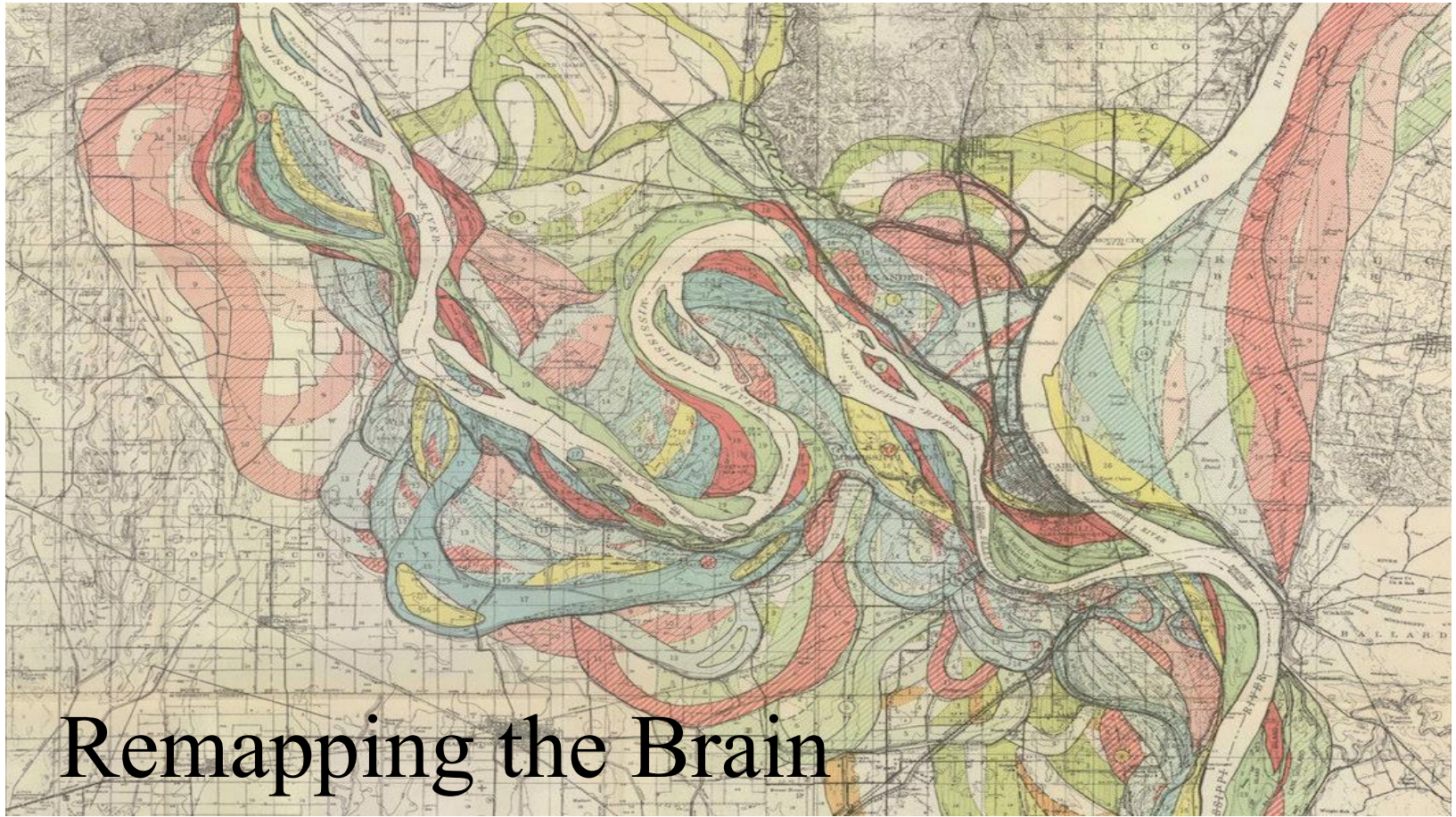
Relapse cues and neural pathways:

- Within microseconds, the pleasure center of the brain of an individual with SUD will “light up” in response to relapse cues
- Research suggests the longer we can engage someone in treatment and address areas that led to the initial patterns of SUD and all areas affected by SUD, the more likely the person will achieve long-term, sustained recovery.

Nat'l of Drug Addiction (NIDA), The Science of Addiction (2014)

HBO Addiction Series, The Science of Relapse,

http://www.hbo.com/addiction/thefilm/centerpiece/614_segment_3.html



1 / 12 Map of the historical meanders of the Mississippi river (detail), by Harold Fisk, 1944.

Retrieved from <http://www.uncubemagazine.com/blog/16587010#>

A perspective view of a white, empty rectangular tunnel or hallway. The walls, floor, and ceiling are all a uniform light gray or off-white color. The perspective is from one end of the tunnel, looking towards the other end. The far end of the tunnel is brightly lit, creating a strong contrast with the slightly darker walls and floor. The text "Free will" is centered on the far wall in a black, serif font.

Free will



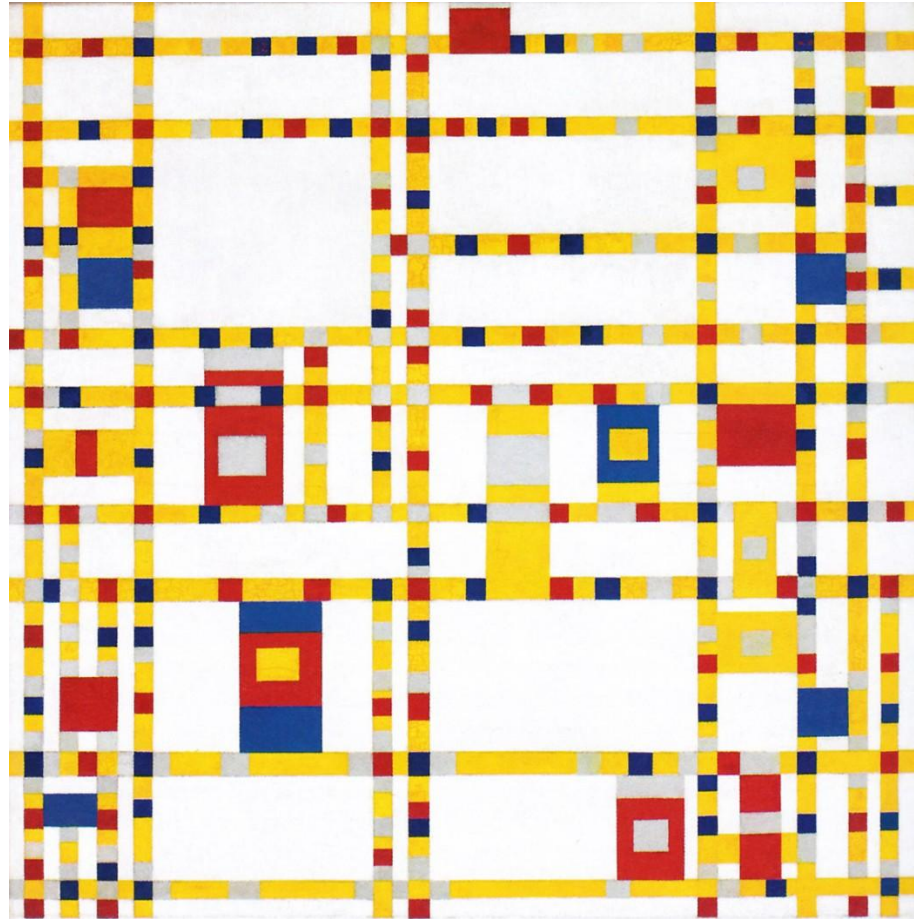
<https://i1.wp.com/amredeemed.com/wp-content/uploads/2016/11/busy-street-nyc-2010.jpg?fit=850%2C446>

Triggers
are
everywhere

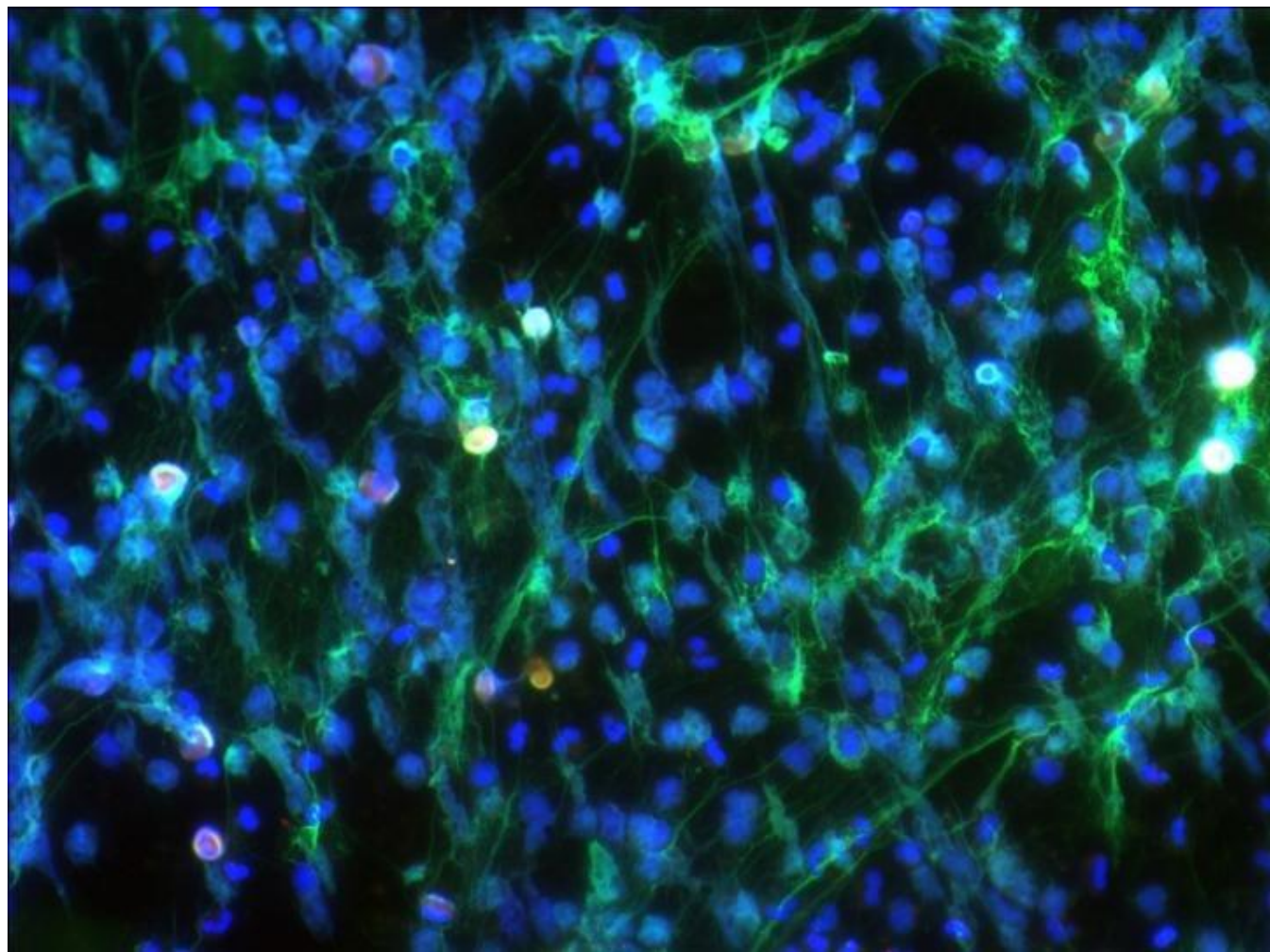




They go
together
like...



Broadway-Boogie-Woogie by Piet
Mondrian
Retrieved from
<http://www.piet-mondrian.org/broadway-boogie-woogie.jsp>



Questions?

Panel Members:

- Jesse Harvey (YPR)
- Anna Gardner (ROCC)
- Bryn Gallagher (ROCC)

