Ecodevelopmental Predictors of Distinctive Profiles of Alcohol and Drug Use by Urban American Indian Youth

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Urban American Indian Communities

- Most American Indians (>70%) live in urban rather than tribal or rural areas
- Urban American Indians (UAI) are relatively neglected in prevention research
- UAI communities are growing & diverse: differences by region, tribal background, and family migration history
- Multi-tribal and multi-cultural, across & even within families

Urban American Indian Youth: Vulnerable and Underserved

- American Indians (AI) contend with the severest disparities in morbidity and mortality related to substance use
- AI youth report higher rates, earlier onset, more severe consequences, and less perceived harm of drug use than their non-Native counterparts
- AI youth substance use is associated with academic failure, delinquency, unemployment, violent behavior, depression, conduct disorder & suicidality

Substance Use among AI Youth

- One-year prevalence (%) of substance use among adolescents aged 12-17 years (N=72,561)

	American Indian	White	African American	Hispanic
Alcohol or drug	**47.5**	39.2	32.2	36.7
Alcohol	**37.0**	35.3	24.8	32.2
Marijuana	**23.5**	13.9	12.2	11.8
Inhalants	**5.3**	4.5	2.9	4.4
Stimulants	**2.4**	2.2	0.8	1.4
Tranquilizers	2.5	**2.6**	0.6	1.3
Cocaine	**3.7**	1.8	0.2	1.6

Source: Wu, L., Woody, G. E., Yang, C., Pan, J., & Blazer, D. G. (2011). *Racial/ethnic variations in substance –related disorders among adolescents in the United States*. Arch Gen Psychiatry, 68, 1176-1185.

The Paradox of AI Alcohol Abstinence

AI youth may be exposed to role models and social influences encouraging abstinence from alcohol use. AI adults report higher rates of current or past-year alcohol abstinence than the general U.S. adult population

- (May, 1996; May & Gossage, 2001; Whitesell et al., 2006)

- In a longitudinal study across eight reservations the majority of AI adolescents (64%) reported abstaining from drinking up to age 14
  - (Cheadle & Whitbeck, 2011).
- Add-Health - no significant differences between AI adolescents and white adolescents in past 12-month heavy alcohol use
  - (Eitle, Eitle, & Johnson-Jennings, 2013)
- AI youth have lower or similar rates of alcohol use compared to white and Hispanic adolescents
  - (SAMHSA, 2008; Young & Joe, 2009; Stagman, Schwarz, & Powers, 2011).

Social Influences in Urban AI Communities May Promote Abstinence

- More racially heterogeneous peer networks than AI youth on tribal lands
- Peers and schools as supportive assets as important components to their self-esteem and resilience
- Urban schools may be more likely to provide effective universal substance use prevention programs

Social Context of Urban American Indian Youth Substance Use

- Forced relocation
- Migration between city and reservation
- Residential instability
- Poverty, unemployment, low educational attainment
- Inter-marriage across tribal, racial & ethnic lines
- Acculturation struggles, threat of loss of culture
- Minority status, discrimination, historical trauma, “invisibility”

Purpose

1. Examine patterns of different types of substance use in a large state-wide sample of urban American Indian youth using latent class analysis (LCA).

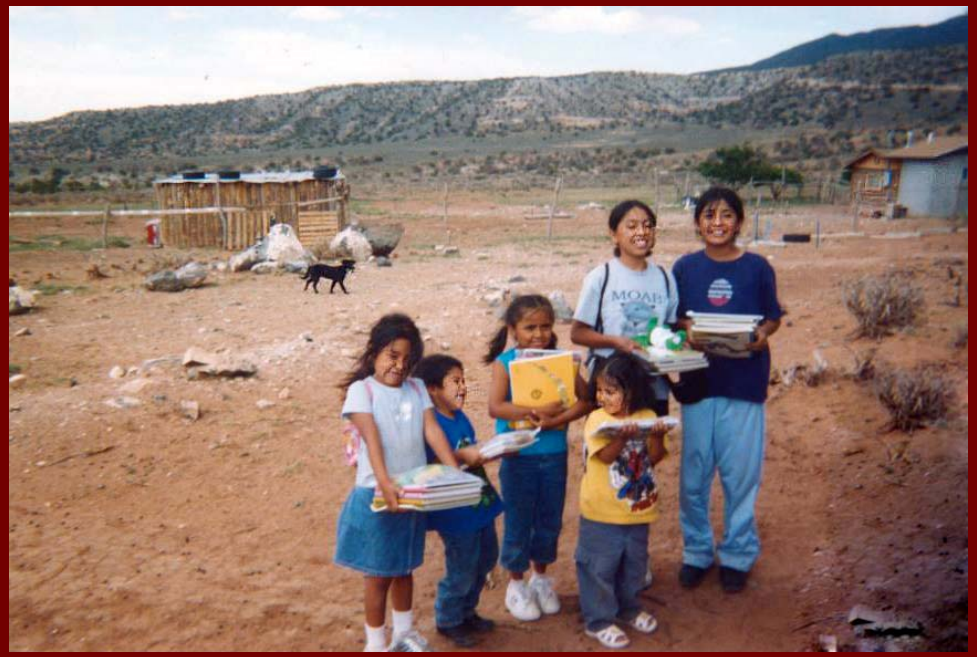
2. Investigate associations of the latent classes with an array of ecodevelopmental factors

Data

- 2012 Arizona Youth Survey
  - Cross-sectional
  - Represents all AZ counties
  - School-based (>300 schools)
  - Total N= 61,141; Urban AI subsample = 2,407
  - 8th, 10th, & 12th grade
  - Modeled after Communities that Care Survey

- American Indian youth:
  - Answered *yes* to: "What is your race... American Indian or Alaska Native?"

Defining Urban American Indian Communities



Who is an “urban American Indian”?

- Discussed with SIRC American Indian Steering group
- Decision: Important to distinguish
  - Metropolitan Urban (>250,000)
    - N=2,407 in 2012 AYS
  - Small Urban (Places of 50,000 – 249,999)
    - N=410

Rocky Mountains
Lake Michigan
Lake Erie
United States
Gulf of California
Gulf of Mexico
Straits of Florida
Mexico
Mexico City

Wyoming
South Dakota
Nebraska
Wasatch Range
Great Salt Lake Desert
Klamath Mountains
Black Rock Desert
Front Range
Utah
Colorado
Nevada
Sierra Nevada Mountains
California
Grand Canyon
Mogollon Rim
New Mexico
Los Angeles
Arizona
White Sands Desert
Sonoran Desert
aja California
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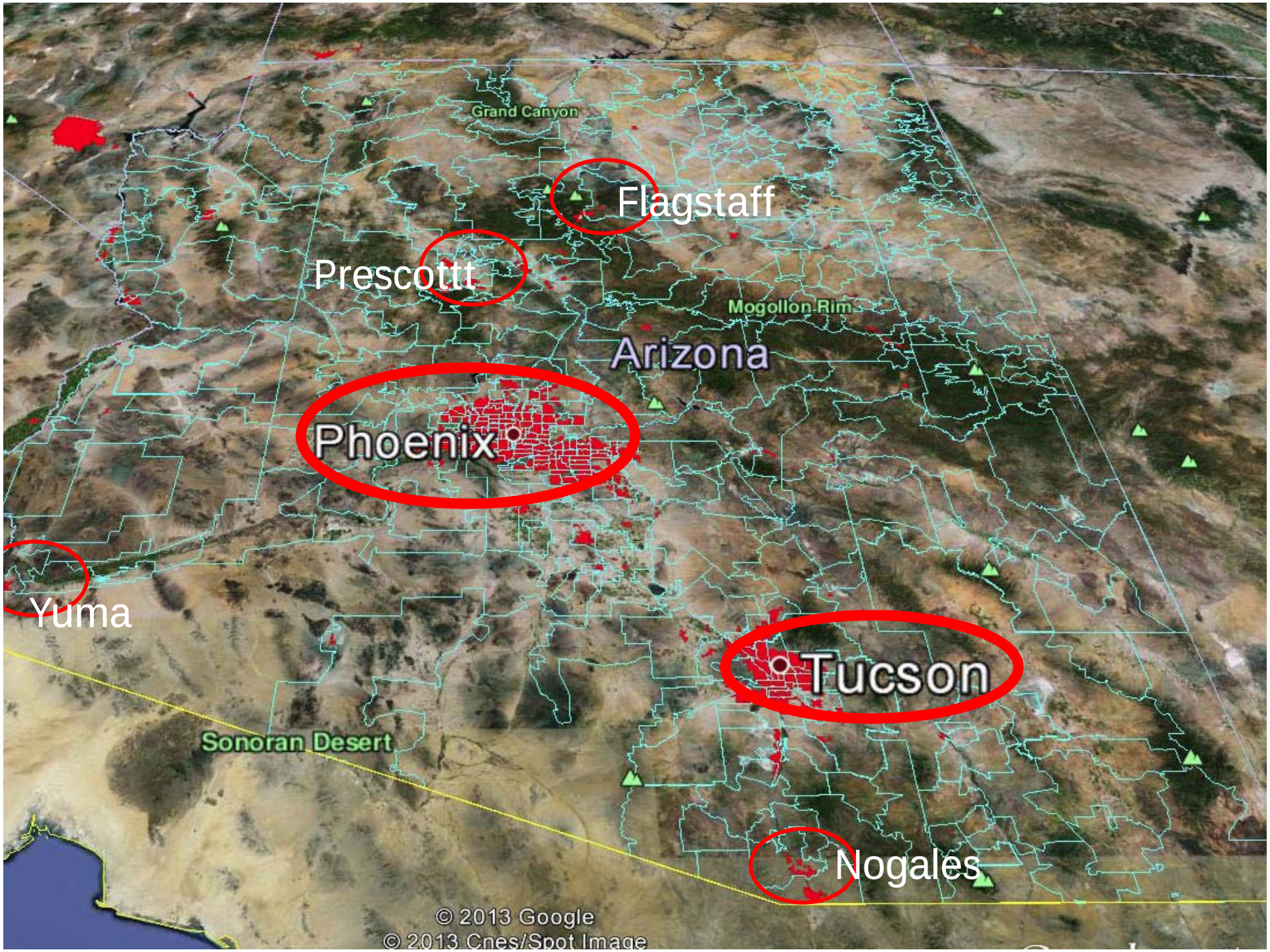
Grand Canyon
Flagstaff
Prescottt
Mogollon Rim
Arizona
Phoenix
Yuma
Tucson
Sonoran Desert
Nogales
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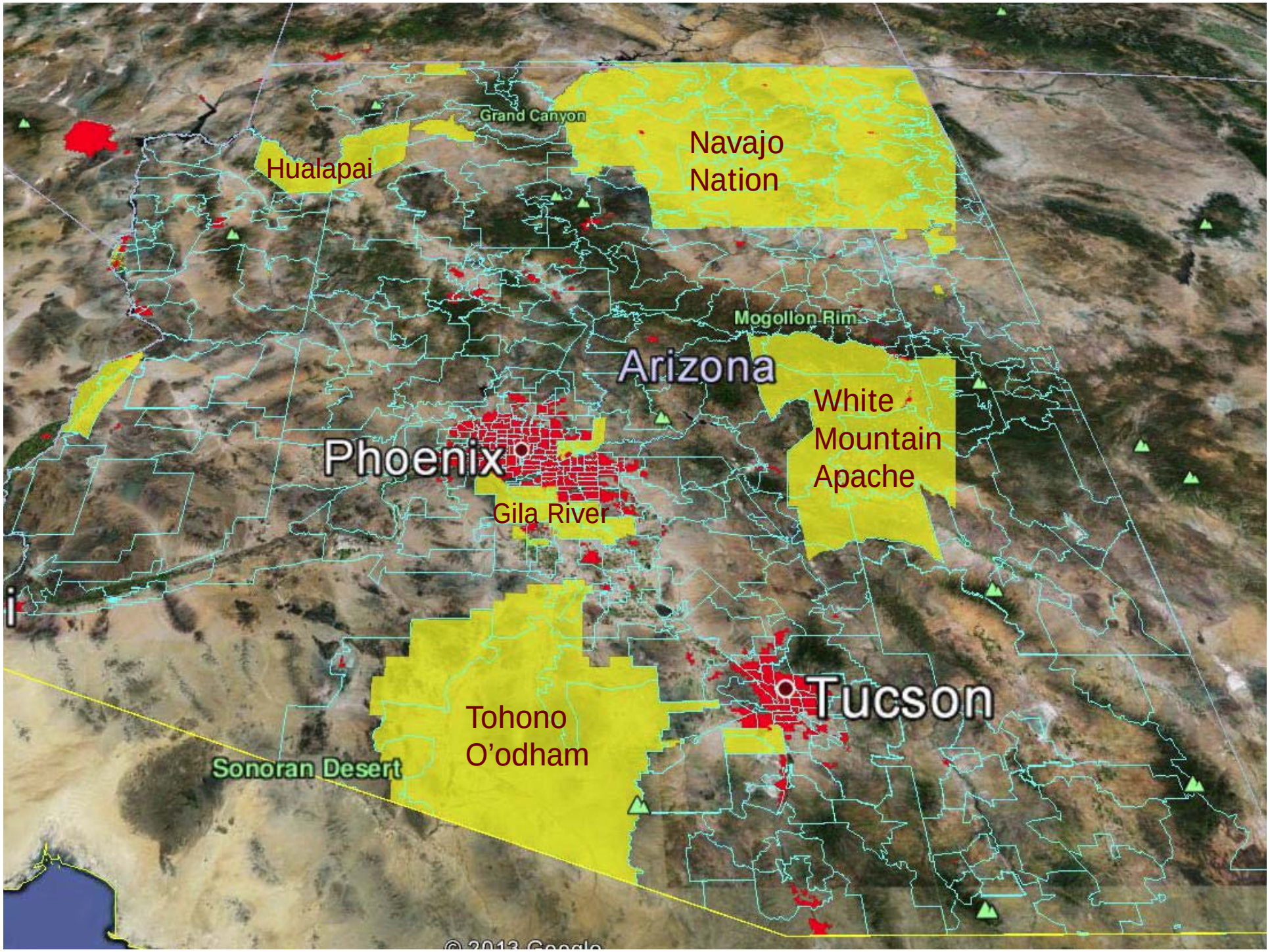
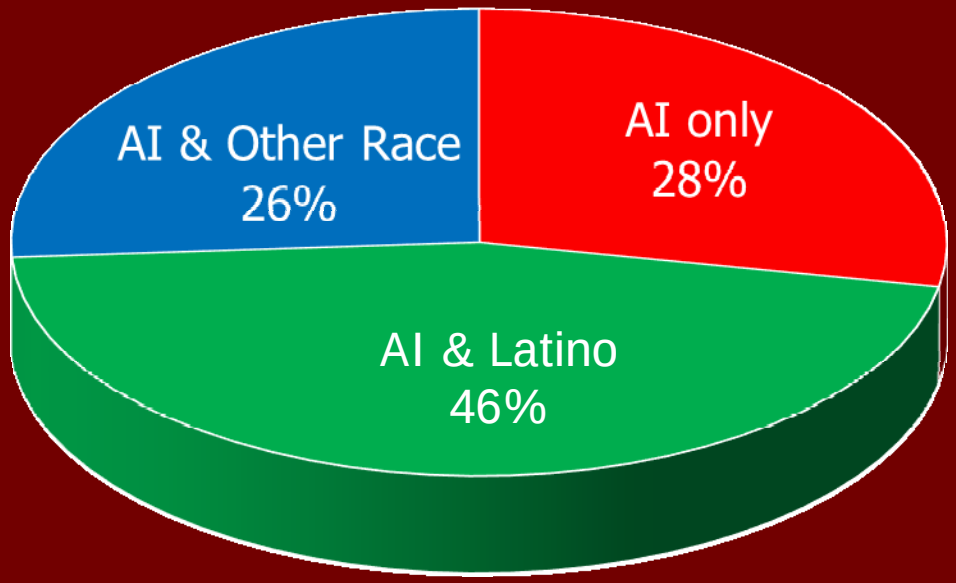

Grand Canyon
Navajo Nation
Hualapai
Mogollon Rim
Arizona
White Mountain Apache
Phoenix
Gila River
Tucson
Tohono O'odham
Sonoran Desert

Demographics (metropolitan urban)

Low SES: In Federal School Lunch program	52%
2-parent household	62%
Parent served in military	77%
Average mother education	Some College

American Indian ethnicity

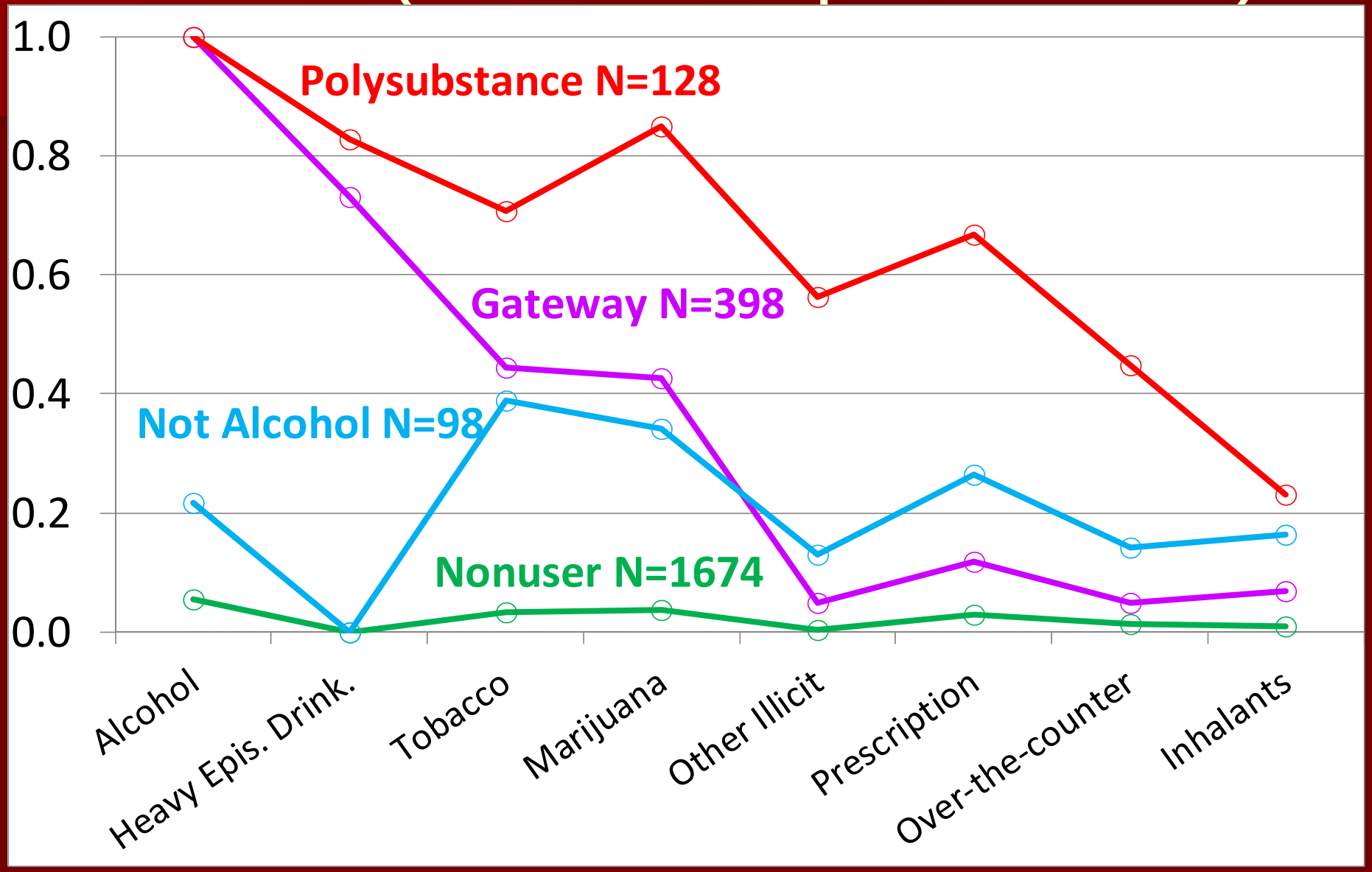


Latent Class Analysis of Last 30-day Substance Use

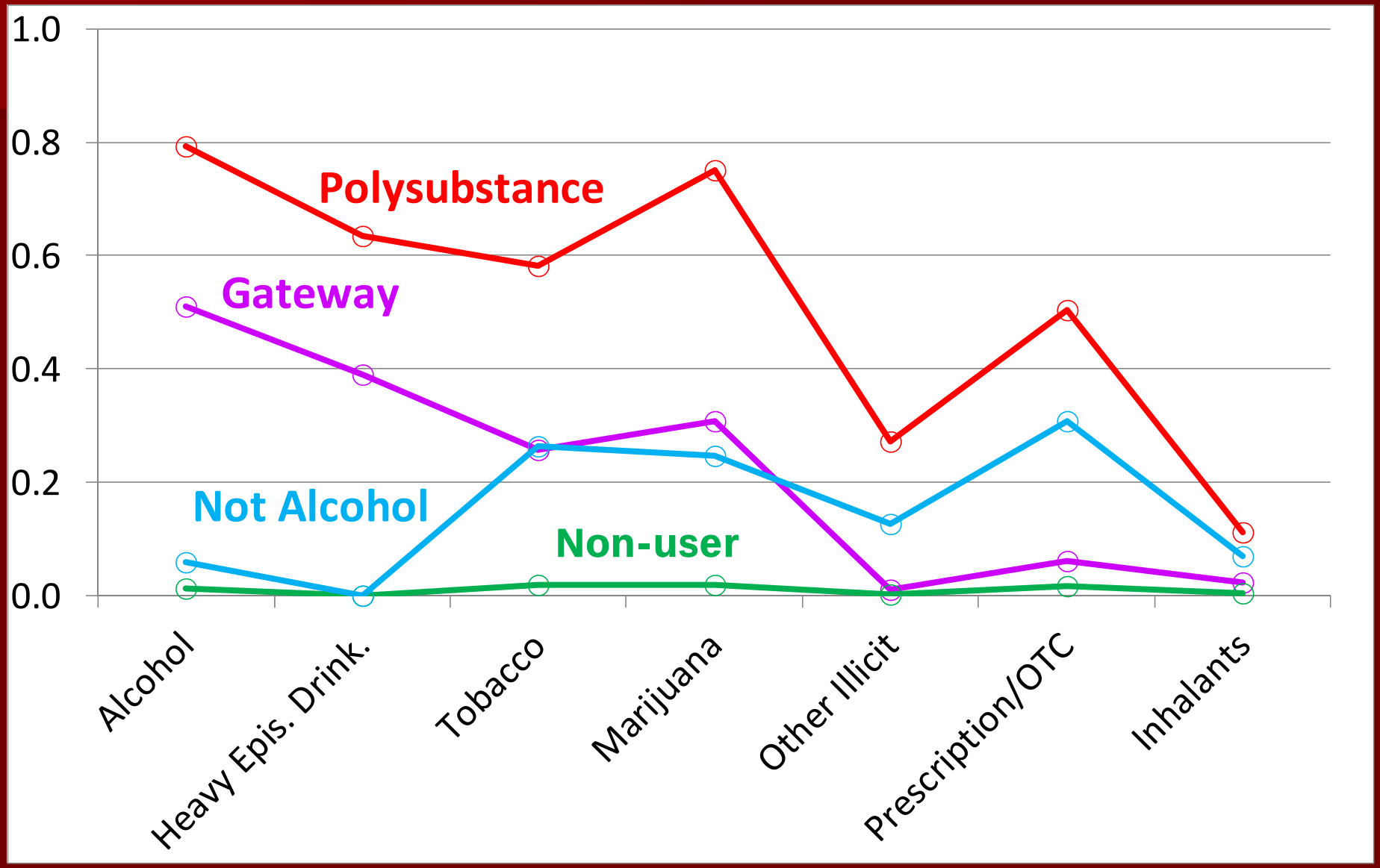
Eight dichotomized (use/no use) measures:
Alcohol, binge drinking, tobacco, inhalants, marijuana, other illicit drugs, prescription misuse, OTC misuse

	3 classes	**4 classes**	**5 classes**
Loglikelihood Ratio	-5124.7	-5083.3	-5071.7
Adjusted BIC	10367.9	***10326.2***	10344.0
Entropy	***0.891***	0.805	0.785
Lo,Mendell,Rubin Test (LMR)	$p < 0.000$	***p <0.000***	$p = 0.289$
Parametric bootstrapped likelihood ratio test (BLRT)	$p < 0.000$	***p <0.000***	$p = 0.065$

Recent Substance Use, by Latent Classes (conditional probabilities)



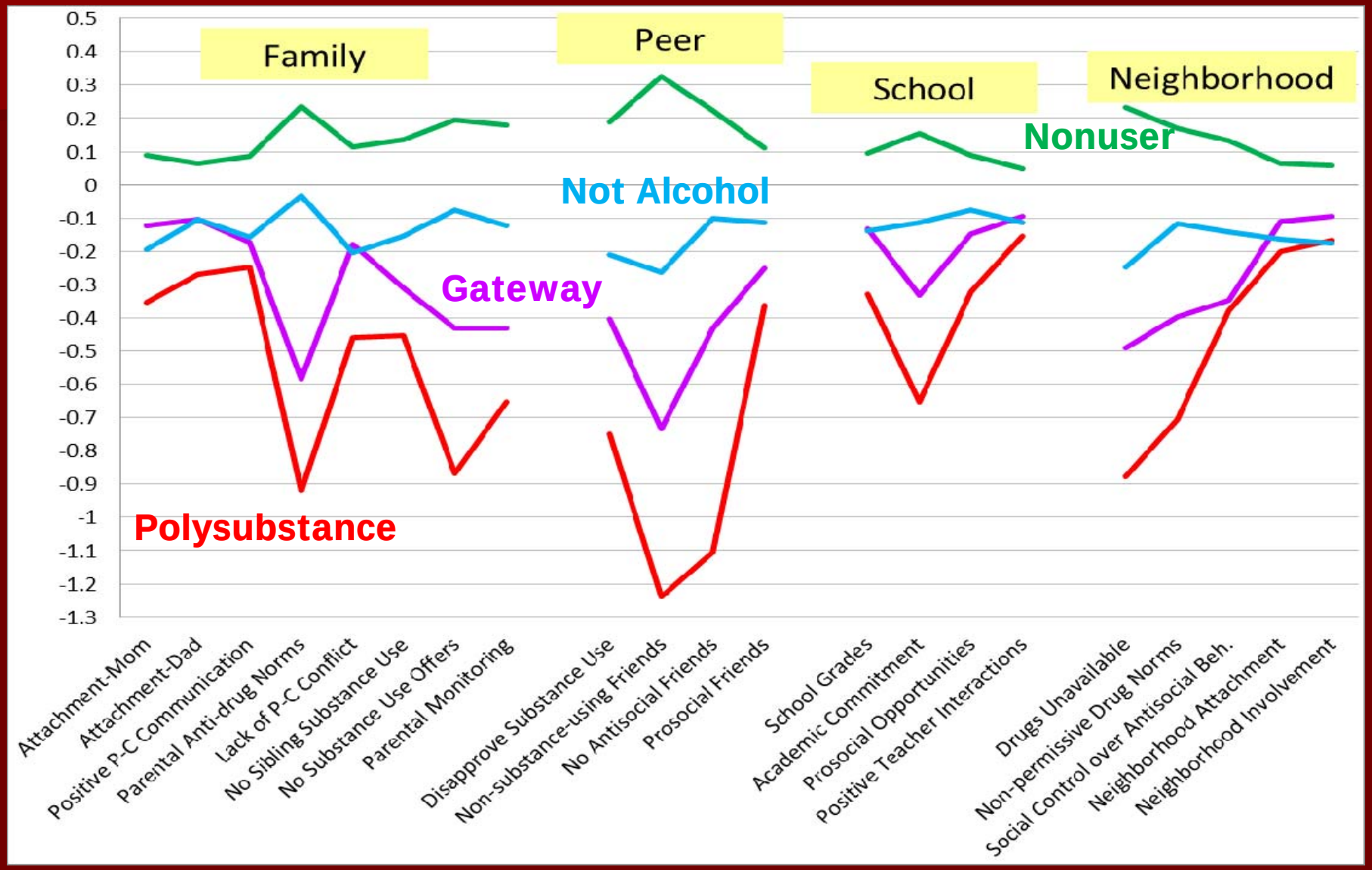
Recent "Regular" Use (> 2 times in last 30 days)



Tests of Ecodevelopmental Influences

- Mplus Equality of Means tests within LCA
- Tests control for age, grade level, gender, parent education, mixed AI/non-AI heritage
- Four sets of measures of ecodevelopmental realms
  - Neighborhood
  - School
  - Peer
  - Family
- Negative influences reverse scored

Ecodevelopmental Predictors of Substance Use (standardized means) by Latent Classes

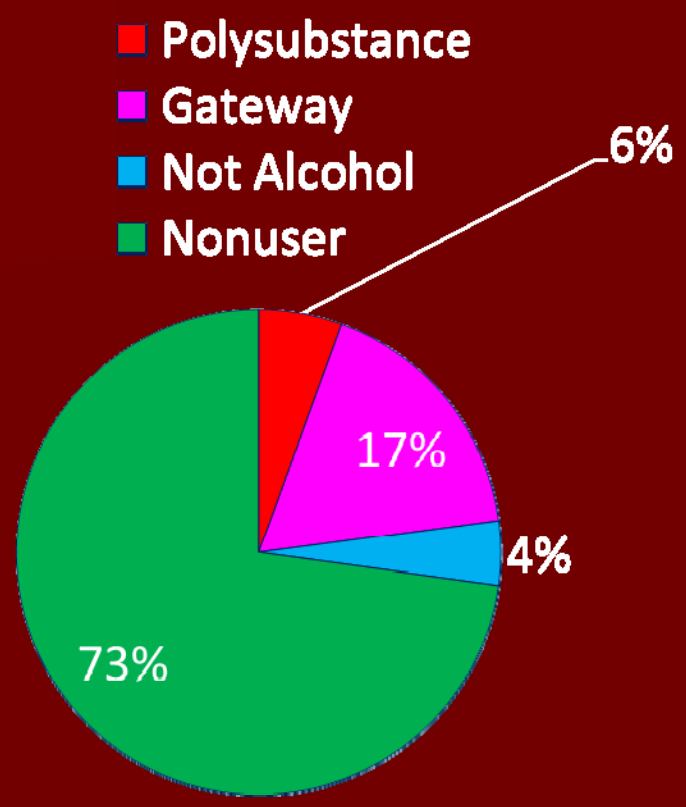


Largest Differences among Classes on Ecodevelopmental Influences

- Polysubstance users report
  - [FAMILY] more P-C conflict, family drug offers & use
  - [PEER] more involvement with anti-social peers
  - [SCHOOL] less academic commitment
  - [NEIGHBORHOOD] more drug availability, more permissive attitudes towards drugs, less social control
- Gateway class again the next most “at risk”
- “Not Alcohol” class between Gateway & Nonusers
- Smaller differences on positive influences: parental attachment & communication, prosocial friends, teacher interactions, neighborhood attachment

Summary

- Nearly 3/4 of UAI students reported no recent substance use
- “Gateway” users were the most numerous class of users
- Polysubstance users of gateway plus other drugs typically were not “experimenting;” used regularly and often misused prescription drugs too
- Users of substances other than alcohol formed a distinct class
- On associations with ecodevopmental influences the Polysubstance class was most at risk; Nonusers the least; “Not Alcohol” class more similar to Nonusers than to Gateway users



Implications

- Urban AI polysubstance users present a profile of great ecodevelopmental vulnerability and high rates of regular recent substance use.
- The “Not Alcohol” users deserve more intensive study to understand how their substance use choices and opportunities are shaped.
- Risk factors (negative ecodevelopmental influences) distinguish the latent classes more strongly than protective factors (positive ecodevelopmental influences).

Next Steps

- How do ecodevelopmental factors interact to influence urban AI youths' substance use?
- Vital for designing and delivering more effective strengths-based prevention interventions for UAI youth & parents.
- This study documents powerful effects of negative ecodevelopmental forces.
- Important to investigate moderating effects of positive influences, e.g., whether/how positive family and peer influences buffer negative influences at family, peer and neighborhood levels

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Questions?

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The majority of American Indians (AI) now live in cities, but research is lacking on the social determinants of their unique vulnerability to and resilience against substance use. This presentation describes how distinctive substance use patterns of urban AI youth are related to multi-level ecodevelopmental influences. Data come from 2,407 urban AI youth in the 2012 Arizona Youth Survey, a state-wide survey of 8th, 10th, and 12th grade students. Eight dichotomized last 30-day substance use measures (alcohol, binge drinking, tobacco, inhalants, marijuana, other illicit drugs, prescription misuse, OTC misuse) were employed in an Mplus latent class analysis (LCA) that also tested for mean differences on measures of positive and negative influences of families, peers, schools and neighborhoods. The LCA supported a 4-class solution: (1) non-users of all substances (69%); (2) users of tobacco and marijuana but not alcohol (4%); (3) "gateway" users (alcohol, cigarettes, marijuana, usually at least two in combination) (17%); and (4) polysubstance users who combined "gateway" and other illicit drug use (6%). There were significant mean differences across the classes on 21 ecodevelopmental measures (all except peer approval of prosocial behavior). The general pattern was that the non-user class reported the highest scores on positive influences (e.g. positive family communication, peer prosocial behavior, positive teacher interactions, neighborhood attachment) and lowest scores on negative influences (e.g., adult substance abuse in family, involvement with antisocial peers, neighborhood drug availability), while polysubstance users scored lowest on positive and highest on negative influences. The latent class using substances other than alcohol is distinctive in this population; compared to other urban AI substance using youth, they reported less exposure to negative ecodevelopmental influences. Knowledge of how to strengthen positive family, peer and school influences on urban AI youth and prevent, counter, or buffer key negative influences can inform family and school interventions.