

Board 1

Cultivating Healthy School Environments: Teachers' And Students' Perceptions of Learning in the Outdoor Classroom

Largo-Wight E, Guardino C, Hall KW, Wludyka PS, Thomas E, Ottenstein C We improved the school environment through the implementation of an outdoor classroom. Research findings suggest that regular "nature contact" strengthens cognitive abilities and facilitates health outcomes among children. Outdoor classrooms are an emerging school-based application of these findings that have recently shown promising results on behavior, attention, and wellbeing among children. Purpose: This study was designed to assess teachers' and students' perceptions of the outdoor classroom experience. Methods: An outdoor classroom was designed and built at a public elementary school in the southeast U.S. Two kindergarten classes (n=1 teacher; n=18 children ages 5-6 years in each class) participated in the six-week study. Each class used the outdoor classroom every other day for their daily writing lesson. Teachers' perceptions of the outdoor classroom were assessed via an online survey. Students' perceptions of the outdoor classroom were assessed via a five-question interview with a random sample of children (n=14). Results: The majority of children (83%) preferred the outdoor classroom for writing lessons because it was "better," "fresh air," and "funner." Two students preferred the indoor classroom because it was "always shady" and "not hot." Both teachers enjoyed teaching the writing lesson more in the outdoor classroom compared to the indoor classroom and perceived that the children also enjoyed it more. The teachers were in general agreement on the impact of the outdoor classroom on the children's quality of work (no difference), creativity (somewhat better), and social interactions (somewhat better/no difference). Conclusion: These preliminary findings suggest teachers and students valued and enjoyed the outdoor classroom. Outdoor classrooms may be a practical and useful healthpromoting asset for every elementary school, alongside the playground, to improve health and development among school-aged children in the U.S

Board 2

Relationship between Cigarette Purchasing Patterns, Readiness to Quit, and Quit Attempts among Homeless Smokers

Wrighting Q, Businelle MS, Kendzor DE, Reitzel LR

Background: An alarming 73% of homeless adults reporting current smoking, although most report wanting to guit. Cigarette purchasing patterns may be linked with greater readiness to make a guit attempt and more guit attempts among domiciled samples but little is known about the cigarette purchasing patterns of homeless smokers and relations to quitting motivations and behaviors. This study redressed this gap among a convenience sample of homeless adult smokers from a large shelter in Dallas, Texas. Methods: Participants (N=207; Mage=43; 71.5% male) smoked >/=100 cigarettes over the lifetime and endorsed current daily smoking. They self-reported their cigarette dependence (time to first cigarette of the day), monthly income, the quantity of cigarettes they most recently purchased (less than a pack, a pack, more than a pack), the average money they spend on cigarettes weekly, their motivation to guit smoking on the Readiness to Quit Ladder, and the number of times they made an intentional guit attempt lasting >/=24 hours in the past year and over their lifetime. Regressions were used to examine associations of cigarette purchasing patterns with readiness to guit and guit attempts controlling for sex, age, cigarette dependence, and income. Results: Most participants purchased cigarettes by the pack (61.4%), followed by quantities that were less than a pack (23.7%). More than half the sample spent </=\$20 on cigarettes per week. The average readiness to guit was

5.8/10. On average, participants endorsed 2.7 past-year quit attempts and 4.9 lifetime quit attempts. Results indicated that purchasing fewer cigarettes was associated with more lifetime quit attempts (p=.042). Spending less money on cigarettes was associated with greater readiness to quit (p=.016) and marginally associated with more past-year quit attempts (p=.085). **Conclusions:** Homeless smokers who spend little money on cigarettes and purchase small quantities of cigarettes may make particularly apt targets for cessation interventions.

Board 3

Adolescents at High Risk for Type 2 Diabetes: Examining the Impact of Family, Healthcare Professionals and Peer Advice on Engaging in Physical Activity Amuta AO. Jacobs W. Barry AE

Purpose: About 22% of college students are currently overweight, and studies have shown that many college students do not meet the recommended daily physical activity (PA) levels. Given that these students are increasingly exposed to different sources of information/advice to engage in PA, it is imperative to understand which of these advice sources is most influential. The purpose of this study was to examine the relative impact of different sources of advice regarding exercise and PA on actual physical activity engagement among obese/overweight adolescents. Methods: Using data from 319 overweight/obese college students, multivariate regression analyses were conducted to examine which source(s) of advice (from parents, peers, or healthcare provider) to engage in PA was associated with PA behavior among these adolescents. Additionally, influence of T2D family history on physical activity behavior was also examined. Results: Moderate and vigorous PA behavior was more likely among obese/overweight adolescents who received advice to exercise or engage in PA from their peers (B=200.85, β= 0.193, p=0.001; B=121.19, β= 0.145, p=0.014). Overweight/obese adolescents with a T2D family history were more likely to walk compared to those without a T2D family history ($\chi 2 = 12.97$, p = 0.000). **Conclusions:** Health care professionals and parents should be encouraged to continually counsel obese/overweight adolescents about engaging in PA. However, more efforts should be targeted at employing other adolescents as peer ambassadors to model and counsel other adolescents on the importance of engaging in PA. This could significantly increase the effectiveness of intervention efforts geared at helping college students meet their recommended daily PA.

Board 4

Key Factors Associated with University Students' Comfort in their Recreational Environment

Patterson MS, Patterson CA, Shaikh HM

Introduction: Research suggests that in conjunction with individual-based characteristics, the environment is a key determinant of physical activity (PA) behavior. Because of health benefits associated with regular PA, it is important the environment is supportive of such behavior. Oncampus recreation facilities provide college students easy access to PA equipment and are typically the central hub for student PA. However, research of on-campus PA environments is sparse. Because college PA participation is predictive of exercise habits in later years, determining factors that enhance a student's comfort in their collegiate PA environment should be investigated. Methods: Undergraduate students (n=189) completed surveys measuring comfort in the recreational facility environment, PA, exercise self-efficacy (SE), and social physique anxiety (SPA). Descriptive, bivariate, and regression analyses were conducted using SPSS. Results: Correlations revealed associations between comfort in the environment and days of strenuous activity (r=.252), SE (r=.406), SPA (r=.335), and identifying as someone who focuses on strength training during workouts (r=.299). The regression analysis (R2=.488,

p<.0001) revealed relationships between comfort in the environment and SE (b=.198, p=.027), SPA (b=.240, p=0.001), identifying as someone who focuses on cardiovascular fitness during workouts (b=.358, p<0.001), identifying as someone who focuses on strength training during workouts (b=.188, p=0.008), weekly use of campus facilities (b=.474, p<0.001) and days per week of strenuous activity (b=-1.90, p=.032). **Conclusion:** This study reveals key factors related to a college student's comfort in his or her recreational environment. Students that use facilities often are more likely to be comfortable in their environment, as well as those that have strong exercise identity in either cardiovascular fitness or strength training. Interestingly, days of strenuous activity was negatively associated with comfort in the environment, possibly due to discontent with dealing with crowds or waiting for equipment during peak hours. Future research should unpack these relationships further.

Board 5

Systematic Review of Mathematical Models Used to Assess U.S. Tobacco Control Interventions: Implications for Policy

Feirman SP, Glasser AM, Rose S, Niaura R, Abrams D, Villanti AC

Purpose: Simulation models can be used to evaluate existing and potential tobacco control interventions, including policies. The purpose of this systematic review was to synthesize evidence from mathematical models used to project population-level effects of tobacco control interventions. Methods: Studies were eligible for review if they employed a mathematical model to predict the expected effects of a non-clinical U.S.-based tobacco control intervention. We searched five electronic databases on July 1, 2013 with no date restrictions. For papers that employed the same model across multiple studies to assess the same intervention type, we only extracted data from the most recent study. We synthesized studies qualitatively. Results: Six primary intervention types were identified across the 40 studies: taxation, youth prevention. smoke-free policies, mass media campaigns, marketing/advertising restrictions, and product regulation. Evidence from multiple studies using different methods demonstrated the independent effect of taxation on decreasing future smoking prevalence. Evidence for other tobacco control interventions generally showed that the strategies produce decreases in smoking, promote health and make sense to implement from an economic perspective. However, because we cannot quantify the intensity of these policies across studies – as opposed to taxes, where the dollar amount of the tax represents a somewhat standard measure - and because these studies were heterogeneous in many ways, we cannot assess the relative effectiveness of these interventions. Studies examining the effects of implementing multiple interventions together found that combined interventions produced more favorable outcomes compared to interventions implemented in isolation. Conclusions: We provide recommendations to strengthen simulation models that evaluate tobacco control interventions. Models should project the impact of interventions on overall tobacco use behavior, not only cigarette use, to estimate long-term population health and economic outcomes. More sophisticated models may be needed to account for multilevel influences on behavior and feedback loops, such as the tobacco industry's behavior.

Board 6

Educational Disparity in Obesity among U.S. Adults, 1984-2013 $An\ R$

Purpose: Examine the annual trends in educational disparity in obesity among U.S. adults 18 years and older from 1984 to 2013. **Methods:** Secondary data analysis of 6,147,379 participants in a repeated cross-sectional nationally-representative health survey of U.S. adults. Results: The obesity prevalence among people with primary school or lower education increased from 17.46% or 3.41 times the prevalence among college graduates (5.12%) in 1984 to 36.16% or 1.73 times the prevalence among college graduates (20.94%) in 2013. In any given year, the obesity prevalence increased monotonically with lower education level. The obesity prevalence across education subgroups without a college degree gradually converged since early 2000s, whereas that between those subgroups and college graduates diverged since late 1980s. Absolute educational disparity in obesity widened by 60.84% to 61.14% during 1984-2013 based on the Absolute Concentration Index and the Slope Index of Inequality. respectively; meanwhile, relative educational disparity narrowed by 52.06% to 52.15% based on the Relative Index of Inequality and the Relative Concentration Index, respectively. The trends in educational disparity in obesity differed substantially by gender, race/ethnicity, age group, and obesity severity. Conclusions: There was substantial educational disparity in obesity among U.S. adults and the trend differed across population subgroups.

Board 7

The Association of Lesbian, Gay, and Bisexual Identity Challenges with Lifetime Smoking and Smoking Dependence

Smith NG, Obasi EM, Reitzel LR

Purpose: Lesbian, gay, and bisexual (LGB) adults have higher rates of smoking than heterosexual adults. However, little research exists examining the predictors of smoking in LGB adults. Moreover, among LGB smokers, research into smoking dependence is almost nonexistent. In addition, LGB individuals face unique stressors, including challenges associated with having a LGB identity. This study explored whether identity-related challenges were associated with lifetime smoking and dependence. Methods: 165 LGB adults (Mage=36; 54% White) were recruited from the local community and via online recruitment. Identity challenges were measured by the Lesbian, Gay, and Bisexual Identity Scale (LGBIS). Lifetime smoking was self-reported as >/=100 cigarettes in lifetime. Dependence was measured by the Wisconsin Inventory of Smoking Dependence Motives and by time to first cigarette of the day. Linear and logistic regressions were calculated with the predictors of eight LGBIS subscales for each criterion. Results: Lifetime smoking was significantly predicted by internalized homonegativity (B = 1.23) and concerns about being stigmatized (B = -.76). Dependence (first cigarette </=30 minutes after waking) was significantly predicted by internalized homonegativity (B = 3.32). Primary dependence motives (core nicotine dependence features) were predicted by internalized homonegativity (B = .73), uncertainty about one's sexual orientation (B = .63), difficult LGB identity development process (B = -.72), and affirmation of LGB identity (B = .68). Secondary dependence motives (e.g., taste, cognitive/affective enhancement) were predicted by internalized homonegativity (B = .59) and affirmation of LGB identity (B = .62). Conclusions: Internalized homonegativity was associated with all outcomes, suggesting that more negative views of one's sexual orientation are more likely among former/current smokers and related to greater dependence. Other LGB identity challenges were also associated with smoking and dependence outcomes. Findings can help explain the higher rate of smoking in LGB populations and offer avenues to better tailor smoking cessation interventions.

Board 8

Participant Adoption of an Ehealth Group for Tobacco Cessation among People Living with HIV: Expanding Possibilities in the Digital Age

Turner D, Rivera A, Logan R, Sharma V, Shuter J, Marhefka S

Purpose: 50 to 70% of people living with HIV (PLH) are smokers. Some studies have investigated group based tobacco cessation programs for PLH; however, ehealth approaches for group cessation have not been well studied. This analysis examines factors that may affect future adoption of a group based video-conferencing tobacco cessation program for PLH— Positively Smoke Free-Video Group (PSF-VG). Methods: Nine PLH participated in the PSF-VG pilot study (6 weeks; 8 sessions). Assessments included a post-intervention focus group and session field notes, analyzed thematically, and guided by the theory Diffusion of Innovations. Results: Participants expressed mild concern over the risk associated with home-based access—another person could be in the room with group members and, thus, limit privacy. The intervention was found to have low complexity, even among those with low technology literacy. Participants indicated a positive impact on social interactions; despite initial reservations, they formed a cohesive group and looked forward to attending group sessions. The relative advantage of participating via VG was noted. Most participants expressed they would not have participated in an in-person smoking cessation group due to past negative experiences or concerns related to in-person group settings. It was the possibility of connecting from home and the high trialability and reversibility (i.e. they could discontinue at any point just by logging off) that made them willing to join. PSF-VG was found to be compatible with participants needs because it addressed the challenges they faced (i.e. both smoking and HIV-related concerns), all group members and one facilitator were PLH, and both facilitators were former smokers. **Conclusions:** VGs present an exciting opportunity to increase the reach of interventions, particularly among those not open to in-person groups. Marketing approaches should highlight the ease of use, the low-risk investment (i.e., trialability and reversibility), and the former smoking experiences of facilitators.

Board 9

Examining Receptivity and Emotional Response to Youth Anti-Smoking Commercials Based on Channel of Exposure

Cantrell J, Ilakkuvan V, Xiao J, Rath J, Hair E, Vallone D

With public health campaigns increasingly using multiple platforms to heighten message exposure, it is important to examine whether the impact of such advertising is different based on the channel through which the message is viewed. This study examines differences in receptivity and emotional response to three truth® anti-smoking commercials that aired on TV and online. Data was from the truth® campaign weekly media tracking survey, a nationally representative cross-sectional survey conducted between July 2014 and August 2015 among youth aged 15-21. Ads included Anthem (an upbeat call to be the generation to end smoking), Unpaid (a callout of celebrity smokers for being unpaid spokespeople for tobacco companies), and Left Swipe (a music video encouraging viewers to reject online dating profiles pictures featuring smoking). Outcomes included receptivity (a 5 point scale that averaged scores across items such as "This ad grabbed my attention") and emotional response (two 5 point scales that averaged scores across items representing positive and negative emotions such as "This ad made me feel hopeful" or "This ad made me feel irritated"). Exposure was coded as TV only, online only or both. Regression models were run for each ad and outcome. Results indicated that exposure online only (vs. TV only) was associated with greater receptivity (b=0.11, p<0.05) and emotional response (b= 0.14, p<0.05) for Unpaid. Exposure on TV and online (vs. TV only) was associated with greater receptivity to Unpaid (b= 0.19, p<0.05) and Left Swipe (b= 0.13,

p<0.05) and greater emotional response to Anthem (b= 0.23, p<0.001) and Left Swipe (b= 0.18, p<0.001). Findings suggest that reactions to truth® ads may be shaped by channel of exposure as well as content of the ad. Research is needed to understand how ads elicit different responses based on TV or online viewing, and implications for public health messaging.

Board 10

Using Process Evaluation to Identify Implementation Barriers and Solutions for a Physical Activity Program for Latinas

Parra-Medina D, Hilfinger MD, Esparza L

Purpose: Successful health promotion interventions must engage in continuous quality improvement to address factors at multiple levels of influence that impact program implementation and effectiveness. **Methods:** Eight community resource centers (CRCs) in 3 predominantly Latino counties in South Texas were randomly assigned to either a promotoraled physical activity (PA) Intervention (4 CRCs) or a control condition (4 CRCs). The 40-week PA intervention includes 16 weekly sessions plus a 24-week maintenance program. In 2014, promotoras delivered the intervention to the first of three planned cohorts that included 208 women; 111 PA intervention (28/CRC) and 97 control (24/CRC). We used a structured, ongoing process evaluation to identify issues relevant to implementation of the PA intervention. Sources of process data included site observations, attendance logs, program implementation checklists, and promotora weekly reports and debriefings. These data were triangulated to identify issues relevant to program content, delivery, infrastructure, and environmental context. Results: We identified implementation barriers at multiple levels: individual (i.e., health literacy, depression, varying levels of fitness and exercise skills), interpersonal (i.e., childcare, spousal support and other family responsibilities), organizational (i.e., inadequate meeting space and equipment; community relations; promotora's schedules; protocol rigidity), and environmental (i.e., presence of border patrol, poverty, violence). Strategies to address these implementation barriers include curriculum modifications to simplify content, additional training and support for promotoras, strategic communication with CRC directors, enhanced rewards/recognitions structure to increase program identity and participation, and increased opportunities for participant social interaction. Conclusion: Continuous improvement in the context of health behavior change interventions is an on-going effort to learn from past experience and translate this learning into improved performance. It consists of many incremental improvements rather than one overwhelming innovation. It involves everyone, researchers, program staff, community stakeholders and participants to identify implementation barriers and solutions.

Board 11

Family Structure and Adult Physical Activity Level in a Low-Income Community Bernhart J. Ylitalo KR, Umstattd Meyer RM, Doyle El, Stone K

Purpose: One in four adults in the United States does not regularly participate in physical activity (PA), despite numerous health benefits. Understanding the PA behaviors of individuals proves complex, as multiple social and environmental influences impede or promote healthy behaviors. Families and the social support they provide are one such influence on health. The purpose of this investigation was to evaluate the relationship between family structure and PA among adults in a low-income community. Methods: Households (n=100) were surveyed about behaviors related to healthy living using the Community Assessment for Public Health Emergency Response (CASPER) methodology in a low-income neighborhood in central Texas. Family structure was measured by counting the number of children (<18 years) and adults (≥18 years) in the household. The International Physical Activity Questionnaire was used to assess moderate and vigorous PA among adults. Self-reported activity was converted to metabolic

equivalent (MET) values and compared to current guidelines to determine if adults met recommendations or not. Adult PA was compared for single vs. multi-adult households and for zero vs. any children in the household. **Results:** In our sample, 62% of adult respondents reported ≥600 MET-minutes of PA during the previous 7 days. Adult PA was not associated with children present in the household (any vs. none; p=0.92). Adults who lived in multi-adult households were twice as likely to meet PA recommendations compared to adults who lived in single-adult households (OR=2.41; 95% CI: 1.05, 5.52; p=0.04). **Conclusions:** Multiple adults in the household positively influenced adult PA levels, suggesting that social support in the household may be relevant for adult health behaviors. Future interventions for PA should consider social support both inside and outside of the home, particularly in low-income communities. Furthermore, CASPER methods are easy to use and can be applied in non-disaster situations like measuring health behaviors.

Board 12

Self-Determined Tobacco Use Cessation through Nutrition Education

Hercules GW, Kubena KS, Colwell BG, Robinson S

Background: Currently, tobacco addiction is not commonly treated as other addictions during substance abuse treatment. This has been suggested as a substantial contributor to poor success rates of sobriety frequently seen after treatment. Self-determination theory posits that high intrinsic motivation is key for behavioral change & the Health Belief Model suggests that high perceive competency in one health behavior may yield increases in perceived competency with other health behaviors. Purpose: The objective of this study was to examine the effect of a series of nutrition & health education sessions, which emphasizes the relationships between smoking, substance abuse, & nutrition, on measures of self-determination (i.e. intrinsic motivation) & intentions to guit smoking for current smokers while in treatment for substance abuse addiction. Method: Data were collected for 32 weeks at an adult addiction treatment facility for adults. The 12 week intervention consisted of a series of nutrition & health education sessions & minor changes to facility staff protocol designed to encourage autonomy. competency, & relatedness for smoking cessation. Results: After adjusting for age, results indicated significant increases in intention to guit smoking in age group two [36 to 55 years] (t= -2.35, p=0.0212) & age group three [55 years or greater] (t=-2.44, 0.0190). Significant increases in intrinsic & extrinsic motivation were also found in age group two (t=-5.76, p<0.0001 & t=-3.96, p=0.0001, respectfully) & age group three (t=-2.50, p=0.0163 & t=-2.50, p=0.0164, respectfully). Discussion: Based on our findings the intervention increased both intentions & motivations to guit smoking. However, these results were isolated to adults over the age of 35. These findings create new questions for future applications of self-determination theory & perceived health competency in health behavior interventions.

Board 13

Using the Knowledge and Attitudes of Community Stakeholders to Inform a Multi-State Mental Health First Aid Initiative

Kissell KM, Kinzeler NR, Peters M, Firesheets K, Wilson JF

<u>Purpose:</u> Mental Health First Aid (MHFA) is a national training program that teaches trainees to identify and respond to signs of mental illnesses and substance abuse. Persons trained in MHFA learn to assess a situation and provide assistance. To evaluate the need for MHFA training in a 20-county region in Ohio, Indiana, and Kentucky served by Interact for Health, a philanthropic foundation that supports health promotion programs, a survey of stakeholders in this region was conducted. <u>Methods:</u> A five-question survey soliciting information regarding knowledge and beliefs about MHFA was sent to 2,787 community stakeholders in Fall 2014.

These stakeholders included leaders in local businesses, churches, local governments, fire departments, law enforcement, medical care, education, and veteran services. Subsequently, 75 stakeholders who responded to the initial survey and expressed interest in MHFA were identified for in-depth phone interviews. Results: A total of 380 stakeholders responded to the survey, with response rate ranging from 7%-13%, depending on the state. While all professions were well-represented in survey responses, education had the highest response rate (21%). Of those responding to the survey, 66% had not heard of MHFA and 64% asked for more information about the program. The two most pressing issues identified by the respondents were substance abuse (67%) and mental health issues (30%). In-depth phone interviews revealed that stakeholders believed everyone in their community could benefit from MHFA; however, funding and time were two major barriers (61%). Conclusions: This survey of community stakeholders revealed a lack of knowledge about MHFA, considerable interest in the training program, and heightened concerns about several issues, including substance abuse and mental health, which are directly addressed by MHFA training. The results of this survey will be used to inform the regional MHFA effort in targeting specific populations and overcoming barriers identified by stakeholders.

Board 14

Using the Integrated Behavioral Model of Prediction to Predict Parental Monitoring of Fruit and Vegetable Consumption among Hispanic Mothers Branscum P, Lora K

The Integrated Behavioral Model of Prediction (IBM), a new and emerging health behavior theory in the field of health promotion, was developed in the early 1990's during a National Institute of Mental Health workshop, During the workshop, behavioral theorists (including Albert Bandura and Martin Fishbein) identified similarities and differences among many of the traditional theories of the time, and agreed upon a unified set of constructs that were important for changing and predicting health behaviors. Surprisingly, there have been few application of the IBM since its inception; therefore purpose of this study was to operationalize the IBM for a community needs assessment for the prevention of childhood obesity among Hispanic mothers in Oklahoma City, First, focus groups (n=9) were conducted with mothers in the community and monitoring children's fruit and vegetable consumption was identified as a great concern. Second, the behavior of interest was framed as "Making sure my preschooler eats half of his/her plate filled with fruits and vegetables, at least 5 days a week". Third, following the principle of compatibility, the core constructs of the IBM, including intentions, attitudes, injunctive and descriptive norms, self-efficacy and autonomy, were operationalized to this behavior, and evaluated with a valid and reliable instrument with a sample of Hispanic mothers of preschoolers (n=203). Two rounds of step-wise multiple regression analysis determined how the core constructs of the IBM predicted intentions, and how intentions, self-efficacy and autonomy predicted parental monitoring of the child's fruit and vegetable consumption. Results from regression models showed that self-efficacy and autonomy significantly predicted intentions (adjusted R2=0.282), and intentions, autonomy and self-efficacy significantly predicted maternal monitoring behaviors (adjusted R2=0.093). Results suggest self-efficacy and autonomy are critical for this population of mothers for monitoring their child's fruit and vegetable intake. Implications for public health intervention will be discussed.

Board 15

Adaptation of Alcohol Screening, Brief Intervention, and Referral to Treatment (SBIRT) for Active Duty Military Personnel in an Emergency Department: Results of a Formative Research Study

Reed MB, Holt M, Woodruff SI, DeMers G, Matteucci M

Background: Numerous studies suggest the transient nature of military life coupled with environmental stressors such as life-threatening combat situations are associated with increased alcohol use and alcohol-related problems. Effective programs are needed to identify and address alcohol issues early in 'opportunistic' settings such as an emergency department (ED). When implemented in a healthcare setting, Screening, Brief Intervention, and Referral to Treatment (SBIRT) has been shown to reduce alcohol use in civilian populations. The purpose of the present study was to discover how to best translate the SBIRT approach from a civilian setting to a military setting. **Method:** We conducted 3 focus groups with ED personnel (n= 39) and key informant interviews with active duty service-members (n= 87) at a large Naval Medical Center in the U.S. Participants were asked about potential barriers for conducting a large scale study in a military ED, how to modify SBIRT for military populations, use of civilian vs. military health educators, and concerns with stigma and problematic drinking in the military. Results: Participant responses contained both support and skepticism of successfully implementing SBIRT in a military setting. Some participants expressed appreciation for the non-judgmental approach of SBIRT, the brevity of the intervention, and that the intervention is tailored to level of risk. Many respondents felt the intervention would be better received if civilians provide SBIRT services, as they would feel more secure in regard to their privacy and confidentiality. Others mentioned active duty service-members receive an abundance of education around alcohol use, and consequently, will 'shut down' and under-report alcohol use when SBIRT services are implemented. Conclusion: Although the SBIRT approach has strong evidence supporting efficacy in the civilian population, results of the present study highlight the importance of adapting interventions from one applied setting to another applied setting.

Board 16

"A Lot of What These Video Games are Putting Out, Kids Want to Do That": A Qualitative Look at Smoking in Video Games

Rath JM, Smith AA, Hair EC, LeMond DN, Malone J, Vallone DM

Purpose: Past research on tobacco imagery in youth entertainment focused on movies but video games are the future of youth entertainment. Teenagers and young adults are playing more video games and there has been an increase of tobacco content in games deemed appropriate for children. Additionally, recent media advertisers have spent over 197 million dollars to promote the top 16 youth oriented games that contain tobacco content. The portrayal of tobacco in these games can have a normative and influential impact on young people in relation to the initiation of tobacco use. The purpose of this qualitative study was to understand how teenagers and young adults feel about the portrayal of tobacco in video games and the influence of characters using tobacco products. Methods: Forty-four video interviews were selfconducted from 15-17 (N=19) and 18-21 (N=25) year olds across 23 states. Past 30 day and non-current tobacco users were eligible. Qualified respondents in the Mindswarm online panel received seven questions and were asked to video record their answers in less than one minute per guestion. Themes were developed after viewing all video transcripts. Results: All participants were able to recall seeing tobacco in video games and frequently reported having first played a video game with tobacco content around age 10-11. Although participants reported that they themselves were not influenced by these video games they thought that younger kids would be encouraged to model the tobacco use behavior. Despite saying that they

are not currently influenced by video games, respondents reported that they had been influenced to initiate smoking from playing these games at a young age. **Conclusions:** Screen time is increasing as is advertising spending on video games. More research is needed to understand the potential influence tobacco images have on initiation of smoking among young people.

Board 17

Texas County Alcohol Policies Associated with Traffic Crash Fatalities and Incapacitating Injuries

Rossheim ME, Thombs DL, Suzuki S, Cannell B, Livingston MD, Stephenson C, Wagenaar AC Purpose: In Texas, voters can determine at the local-level the type of alcohol permitted for sale at each type of alcohol outlet. Each year from 2008 to 2014, approximately 40 Texas localities have authorized or expanded the sale of alcohol as a result of these local option elections. A small body of research has examined associations between "wet" versus "dry" county alcohol policies and traffic outcomes, with mixed findings. However, research has largely overlooked variations of "moist" county-level alcohol policies. The purpose of this study was to assess the relationship between county alcohol sales policies and incapacitating traffic crash injuries and fatalities in Texas counties. Methods: County alcohol policy data (2008-2014) were gathered from the Texas Alcoholic Beverage Commission. Incapacitating traffic crash injury (2010-2014) and traffic crash fatality (2008-2014) data were gathered from the Texas Department of Transportation. Multilevel models were constructed to account for associations within each county. Associations between alcohol policies and traffic crash fatalities and incapacitating injuries were examined. Results: Compared to having "dry" policies or policies that only permit the sale of beer with ≤ 4% alcohol by volume, policies permitting the sale of liquor (1) offpremise or (2) both on- and off-premise were associated with a greater number of crashes resulting in incapacitating injuries (DUI-related and overall). Further, compared to "dry" or beer only policies, policies permitting the sale of liquor at restaurants were associated with a greater number of traffic crash fatalities. Conclusions: Legal liquor sales were associated with more traffic crash fatalities and incapacitating injuries. Policymakers and voters should consider the impact of passing less stringent alcohol control policies on traffic crash outcomes in their county. This field of research should be expanded by including data from additional (1) States. (2) years, and (3) health and social outcomes.

Board 18

BMI, Tobacco Use, and Mental Health: Comparing Normal Weight, Overweight and Obese Young Adults in a U.S. National Sample

Stanton CA, Feirman S, Johnson A, Cohn A, Villanti A

Purpose: This study examined demographic and tobacco use correlates of body mass index (BMI; normal overweight, obese) in U.S. young adults. Methods: Data were drawn from 3 waves of the Truth Initiative Young Adult Cohort Study, a nationally-representative sample of young adults aged 18 to 34 drawn from GfK's KnowledgePanel® (n =5,165). Outcome measures were age- and gender-adjusted overweight and obese BMI. Tobacco use intensity (never/noncurrent, non-daily, daily) was assessed for ten products: cigarettes, large cigars, little cigars/cigarillos/bidis, e-cigarettes, hookah, pipe, chewing tobacco, dip/snuff, dissolvable tobacco, and snus. Current (in the past 2-weeks) depression and anxiety were assessed using the 2-item Patient Health Questionnaire and Generalized Anxiety Disorder Questionnaire, respectively. Results: The majority of respondents were female (53%), White (59%), had no depression (85%) or anxiety (84%), and had non-normal BMI (overweight, 28%; obese, 24%). Older respondents (25-34 vs. 18-24), non-Hispanic Blacks and Hispanics (vs. non-Hispanic

White) were significantly more likely to have non-normal BMI (vs. normal). While daily tobacco use (vs. never/noncurrent) was associated with both overweight and obesity in unadjusted analyses (p<0.001), the association was no longer significant for overweight BMI after adjusting for sociodemographics, only the association between daily tobacco use and obesity remained (AOR =1.43; 95% CI: 1.03, 1.97). Controlling for mental health in the final model attenuated the association of daily tobacco use and obese BMI to non-significance (AOR =1.35; 95% CI: 0.98, 1.86). **Conclusions:** Daily tobacco use and mental health symptoms were associated with obesity and may reflect a broader susceptibility for developing chronic diseases, particularly among vulnerable populations such as non-Hispanic Blacks, Hispanics and those reporting lower SES. Longitudinal work to identify trajectories of high risk health-behaviors are needed to inform public health policies and effective clinical interventions that address root causes of deadly chronic diseases.

Board 19

Implicit Motivational Processes of Drinking and Smoking under Nicotine Deprived and Non-Deprived Conditions

Cohn AM, Ehlke SJ, Cobb CO

Alcohol is a primary trigger for smoking, impedes successful cessation efforts, and multiplicatively increases the risk of cancer among smokers. According to the negative reinforcement model of addiction, nicotine deprivation may cue one's desire to drink to alleviate withdrawal. Implicit association tasks (IATs) have been used to examine implicit motivations for alcohol and tobacco use. However, no study to date has examined implicit attitudes toward tobacco and alcohol simultaneously. This study addresses a critical research gap by characterizing the motivational processes that link problem drinking with smoking using an IAT paradigm. Risky and non-risky drinking smokers under nicotine-deprived (≥6 hours) and nondeprived conditions completed an IAT designed to measure the strength of association between alcohol (or smoking) pictures and approach (or avoid) words. We hypothesized that non-risky drinking smokers would show little implicit desire to drink; whereas nicotine-deprived risky drinking smokers would have a stronger implicit desire to drink than to smoke. To date, 111 participants have completed the experiment (45.9% risky drinking smokers; final sample size will be 120). Initial results are consistent with our hypothesis. Non-risky drinking smokers have stronger cigarette-approach cognitions when nicotine-deprived, whereas risky drinking smokers have stronger alcohol-approach when non-deprived. Further, when nicotine-deprived, non-risky drinking smokers have stronger cigarette-approach cognitions versus non-deprived, indicating stronger attentional bias for cigarettes during nicotine withdrawal. Interestingly, risky drinking smokers had stronger alcohol-approach cognitions when they were nicotine-satiated (IAT score=-.09) then when they were nicotine-deprived (IAT score=.05; t(43)=-2.09, p=.043). The withdrawal syndrome among risky drinking smokers may attenuate the desire to drink; it is only when these smokers are satiated with nicotine that their focus is shifted more strongly to alcohol. Findings provide initial information on a potential mechanism that may underlie polysubstance use among risky drinking smokers, which has far reaching implications for prevention and treatment.

Board 20

Trends and Predictors of HPV Vaccination among College Women and Men

Thompson EL, Vamos CA, Vazquez-Otero C, Logan R, Griner S, Daley EM Introduction: The HPV vaccine was recommended for the prevention of HPV-related cancers and genital warts for young adult females in 2006 and males in 2011. As this prevention mechanism continues to disseminate, it is necessary to continue monitoring vaccine uptake. College students represent an important population for HPV vaccination and necessitate continued vaccination surveillance due to being at increased risk for HPV infection and representing a priority population for catch-up HPV vaccination. The purpose of this study was to 1) assess the trends in HPV vaccination among United States college females and males from 2009 to 2013; and 2) evaluate whether socio-demographic factors differ between males and females for HPV vaccination. Methods: The National College Health Assessment (Fall 2009-2013; N=107,910) was used to assess trends in HPV vaccination using hierarchical logistic regression across genders and demographic variables (e.g., sexual orientation, age, race/ethnicity, relationship status, and marital status). Additionally, hierarchical logistic regression was used for 2013 data to assess demographic variables associated with HPV vaccination for males and females. Results: Females had nearly double the rates of HPV vaccination compared to males across survey periods (59.0% vs. 29.8%). All demographic subgroups had significant increases in vaccine rates over time; with select male sub-groups having more accelerated increases (e.g., homosexuals 8.2% to 41.2%). Young age (18-21 vs. 22-26 years) was a significant predictor for HPV vaccination among males and females, respectively (Males: aOR=2.26, 95% CI 2.00-2.57; Females: aOR=1.49, 95% CI 1.37-1.63), while race/ethnicity was a predictor of vaccination among females only. **Conclusion:** This study assessed the trends and predictors of HPV vaccination among college students from 2009 to 2013. These findings identified the demographic sub-groups who continue to need additional support for HPV vaccination. College campus health centers may be appropriate agents to increase awareness and facilitate clinical opportunities for HPV vaccination.

Board 21

The Role of Attitudinal Ambivalence in the Relationship between E-Cigarette Messages and E-Cigarette Benefit and Harm Perceptions

Majmundar A. Moran MB

Purpose: E-cigarettes are a potential pathway to nicotine dependence and combustible tobacco use among never smokers, but are often marketed as a healthy alternative to smoking cigarettes. Currently, e-cigarette advertisements are not required to display any standard warning label communicating their potential risks and harms. As such, consumers may have considerable ambiguity about the harms and benefits of e-cigarettes. While research has indicated that exposure and receptivity to e-cigarette marketing influences product use, no work has examined the extent to which this ambiguity about the harms and benefits of e-cigarettes leaves consumers vulnerable to the effects of e-cigarette marketing. This study addresses this gap and seeks to understand the interrelationships between: (a) e-cigarette use perceptions (b) prevalence and degree of attitudinal ambivalence regarding e-cigarette use, and (c) exposure and receptivity to different e-cigarette messages and their effect on the above-mentioned constructs. Methods: College students enrolled in a large, public Southwestern university participated in the study. As part of a randomized, controlled experiment, participants randomly assigned to pretest—posttest condition or posttest only condition, were exposed to one of the ecigarette message conditions: (1) message argument supporting possible health benefits of ecigarette smoking, (2) message argument highlighting negative health outcomes associated with e-cigarette smoking, (3) conflicting message with one argument each for benefit and risks

of e-cigarette smoking (the order of the benefit and risk arguments was rotated as well). **Results:** The effects of exposure to each ad condition on e-cigarette perceptions and attitudes will be reported. **Conclusions:** The findings of this research yield actionable insights regarding actions the Food and Drug Administration could potentially take regarding e-cigarette advertising and risk and harm labeling. This study's findings on the role of conflicting health information and attitudinal ambivalence can also inform communication for other products such as prescription drugs, marijuana, or food.

Board 22

The Impact of Campaign-Related Conversations Regarding a National Youth Smoking Prevention Campaign among Youth Whose Parents Smoke

Cantrell J. Xiao H. Smith AA, Williams VF, Rath JM, Hair EC, Vallone DM Prior research indicates that youth receptivity to anti-smoking media campaigns is shaped by campaign-related conversations with social network members. However, the impact of these conversations on campaign receptivity may differ depending on whether network members smoke. This study examines whether the impact of conversations about a national youth smoking prevention campaign on anti-smoking attitudes differs depending on whether a youth's family members smoke. A nationally representative probability-based longitudinal cohort of youth aged 15-21 were surveyed in Fall 2014 (pre-campaign launch) and 6 months later in Winter 2015 (post-launch). This analysis includes youth who reported awareness of campaign advertisements (n=2.820). Youth were asked if they had a conversation with family members regarding specific campaign ads. Responses were averaged across ads and scores dichotomized as no conversation or some conversation. Parent smoking was dichotomized as either or both parents' current smoking versus no current smoking. Outcomes included two campaign attitudes based on averaged scales from items that assessed independence from tobacco and desire to join a social movement to end smoking. Regression models included interactions between conversations and parent smoking. Findings indicated a significant interaction for both outcomes, with stratified models demonstrating that among youth whose parents smoked, conversations were associated with greater increases in attitudes for independence from smoking (b =0.32; p<.001) and joining an anti-smoking movement (b=0.33; p<.008). There was no effect of conversations on attitudes among youth with non-smoking parents. Limitations include the inability to control for some potential confounders and limited data on the content of conversations. Findings suggest that campaign conversations with adult smoking network members may be beneficial. Given evidence indicating that regret is a nearly universal emotion among adult smokers, utilizing the experience of smoking parents to support youth prevention campaign messaging may be an effective strategy for reaching youth at high risk for smoking.

Board 23

The Effect of Adolescent Peer Crowd Identification on Cigarette, Alcohol and Marijuana: An Updated Approach for Understanding Adolescent Risk Behavior Moran MB, Zhao X

Purpose: Peer influence is a major predictor of adolescent risk behavior. While adolescents affiliate with small groups of friends, they also typically identify with broader collectives known as peer crowds. Peer crowds are macro-level subcultures with shared norms, values, styles, preferences and behaviors that, historically, have distinct patterns of risk behavior. This study sought to characterize contemporary adolescent peer crowds on their alcohol, tobacco and marijuana use and on potential psychosocial correlates of these behaviors. Methods: Five hundred and fifty-one adolescents aged 12-15 completed an online survey. Participants reported the peer crowd they most identified with, lifetime and past 30-day use of cigarettes. alcohol, and marijuana, and were assessed on sensation seeking, self-esteem and academic achievement. Results: Four broad crowds were identified: Mainstream, Preppy, Hip Hop and Alternative; these crowds varied significantly (p values < .001 - .05) on substance use behaviors and psychosocial correlates. Youth in the Hip Hop crowd were at elevated risk for use of cigarettes (lifetime:42.4%, 30-day:21.2%), alcohol (lifetime:43.9%, 30-day:24.2%) and marijuana (lifetime:27.3%, 30-day:21.2%). Youth in the Alternative crowd were also at elevated risk for use of cigarettes (lifetime:32.6%, 30-day:14.0%), alcohol (lifetime:41.9%, 30-day:16.3%) and marijuana (lifetime:25.6%, 30-day:21.2%). Youth in the Mainstream crowd were at lower risk for cigarette (lifetime:12.3%, 30-day:3.5%), alcohol (lifetime:27.3%, 30-day:8.8%) and marijuana use (lifetime:5.7%, 30-day:2.6%), as were youth in the preppy crowd (lifetime cigarette use:19.8%, 30-day:7.4%; lifetime alcohol use:30.7%, 30-day:11.9%; lifetime marijuana use:6.4%, 30-day:2.5%). Youth in the Hip Hop crowd had the highest levels of sensation seeking, the Preppy crowd had the highest self-esteem and the Mainstream crowd had the highest level of academic achievement. Conclusions: Adolescent peer crowds vary on several risk behaviors and psychosocial correlates, and offer a useful and innovative strategy for targeting interventions to reduce these behaviors.

Board 24

Factors Associated with Tobacco and Marijuana Dual Use Among Sexual Minority Youth in the U.S.

Bennett M, Cantrell J, Pitzer L, Hair E, Rath J, Vallone D

Rates of youth marijuana use are increasing. Research suggests LGB youth have higher rates of marijuana and tobacco use compared with heterosexual youth, but little research exists on LGB youth who are dual users of tobacco and marijuana. The objective of this study was to assess risk factors of dual use among LGB youth. We used cross-sectional data from a nationally representative cohort study of youth ages 15-21. Respondents who identified as LGB or "other" (LGBO) were included (N=650). Current cigarette and marijuana use were defined as use on at least 1 day in the past 30 days. Dual use was defined as both current cigarette and marijuana use. Multinomial logistic regression was used to assess demographic and social risk factors of cigarette-only, marijuana-only, and dual use compared with each other. We examined each use category as the referent group in separate models to assess all possible differences. A total of 10.5% of LGBO youth (n=68) reported dual use, while 12.8% (n=83) reported current marijuana-only use and 10.9% (n=71) reported current cigarette-only use. Risk of being a dual user, compared with cigarette-only users, was higher for those who were Black compared with Whites (RRR=18.65, p<.05). Risk for dual use compared with cigarette-only use was also greater for those with friends who exhibited more negative peer behaviors (RRR=3.43, p<.01). Compared with marijuana-only users, risk of being a dual user was higher for males

(RRR=2.53, p<.05) and lower for those with friends who exhibited more positive peer behavior (RRR=0.46, p<.01). While rates of marijuana, cigarette, and dual use are similar, we see social and demographic effects on risk of dual use among LGBO youth, with peer behavior as a major influence. Understanding risk factors of marijuana and tobacco use among this group is important to effectively target prevention efforts.

Board 25

Physical Dating Violence, Forced Sexual Intercourse, and Alcohol Use among High School Students

Griner S, Moore M, Wilson K

Background: Many studies report the negative consequences of physical dating violence (PDV) and forced sexual intercourse (FSI) among adolescents including substance use, suicidal thoughts and attempts, depression, higher likelihood of pregnancy, lower self-esteem, and eating disorders. However, few studies have analyzed the relationship between PDV, FSI, and alcohol use (current and binge) among high school students. Early onset alcohol use is associated with many negative health outcomes, including a higher risk for alcohol dependency later in life, concurrent tobacco use, truancy, substance use, and sexual risk-taking behaviors. Methods: The Youth Risk Behavior Survey (YRBS) was administered to high school students (n=3,634) in a large southeastern school district. Data collections followed CDC protocol including randomization and obtaining at least 60% response rate required to calculate weighted data. Five demographic questions, two questions about violence, and two about alcohol were analyzed. Frequencies and Chi Squares were run to determine if an association exists between PDV, FSI, and current and binge alcohol use among students in the county. Results: Eleven percent of high school students reported lifetime experience of FSI, 15% reported experiencing PDV in the past 12 months, 30% reported current alcohol use, and 15% reported binge alcohol use. No significant differences were found between males and females. Significant associations were found between PDV and FSI, current alcohol use and both FSI and PDV, and binge alcohol use and both PDV and FSI. Conclusions: Many studies link dating violence perpetration to alcohol use, but there is little research on the relationship of alcohol use and victimization experiences among high school students. Implications for prevention programming will be discussed. Further research should include longitudinal studies to determine directionality of these associations, while analyzing the specific impact by gender, race, and sexual orientation.

Board 26

Associations between Neighborhood Tobacco Retail Outlet Density and the Cortisol Awakening Response in Black Adults

Obasi EM, Cavanagh L, Forney M, Regan SD, McNeill LH, Reitzel LR

Background: Neighborhood disadvantage has been associated with chronic stress. Moreover, members of the Black community are more likely to reside in these disparate neighborhood conditions. Although tobacco retail outlets may be more prevalent and point-of-sale advertising may be prominent in such neighborhoods, the potential role of these outlets as neighborhood stressors has not previously been conceptualized nor examined. We redressed this knowledge gap among a sample of 124 Black adults in Houston, TX. **Methods:** Participants (Mage=49, 79% female) provided six saliva samples (at wakeup, 30 and 90 minutes post-wakeup, 2:00 PM, 5:00 PM, and pre-bedtime) for cortisol analysis. Their residential addresses were geocoded and tract-level median household income was obtained from the America Community Survey data. The density (count/area) of licensed tobacco retailers around participants' homes was calculated, with area measured along road/street networks. Data on neighborhood problems

(e.g., traffic, crime, noise) were also collected. The relationship between tobacco outlet density and the cortisol awakening response (CAR) was examined within a two-level hierarchical linear model that included neighborhood problems and median household income. **Results:** There were 2 (+/-2) tobacco outlets within a half mile of participants' homes. The observed variability in the CAR was significantly accounted for by outlet density within a half mile of participants' homes. More specifically, greater density was associated with a blunted CAR (p<.05). Neighborhood problems and median household income were not independent predictors. Outlet density at 1+ miles around homes was not associated with the CAR; thus suggesting an importance of proximity. **Conclusions:** Although neighborhoods benefit from resources available at tobacco outlets, the presence of multiple tobacco outlets within close residential proximity may be a social determinant of stress dysregulation among Black adults. Understanding mechanisms underlying this deleterious relationship could provide insight into known disparities that affect negative health outcomes in the Black community.

Board 27

The Effects of Alcohol, Cannabis, and Cigarette Use on the Initiation, Reinitiation and Persistence of Non-Medical Use of Opioids, Sedatives, and Tranquilizers

Lin HC. Arterberry B. Horbal S. Buu A

Purpose: Non-medical prescription drug use (NMPDU) has been a growing concern due to increased prevalence and severity of consequences. Epidemiological research has identified alcohol, cannabis, and cigarette use to be associated with NMPDU and initiation. However, studies have not examined stages of NMPDU in relation to other substances, which can highlight salient factors associated with high risk stages of NMPDU such as reinitiation and persistence. This study examined: (1) whether early-onset and frequency of cannabis, alcohol and cigarette use differentiate stages (initiation, reinitiation, and persistence) of opioid and sedative/tranquilizer use, (2) whether specific substance use and sociodemographic factors are associated with high risk stages (reinitiation and persistence) of opioid and sedative/tranquilizer use. Methods: This study used data from the National Epidemiologic Survey of Alcohol and Related Conditions Wave 1 (2001–2002) and Wave 2 (2004–2005) to examine non-users, prior users, and current users of opioids and sedatives/tranquilizers at risk of initiation, reinitiation, and persistence between Wave 1 and Wave 2 in relation to early-onset and frequency of cannabis, cigarette, and alcohol use, controlling for sociodemographics, Results; Early-onset of cigarette and alcohol use increased the odds of opioid use initiation; early-onset of cannabis, cigarette, and alcohol use increased the odds of sedative/tranquilizer use initiation and opioid reinitiation, persistence, while early-onset cannabis increased the odds of sedative/tranguilizer reinitiation and persistence. Frequency of cannabis and cigarette use predicted all three stages of opioid use, initiation/reinitiation of sedatives/tranquilizers, and frequency of cannabis use alone predicted sedative/tranquilizer persistence. **Conclusions:** This study provided evidence that differentiating among those who have experienced initiation, reinitiation, or persistence of NMPDU via early-onset and frequency of alcohol, cigarettes, and cannabis is vital, as there are specific aspects that influence risk. Therefore, tailoring interventions at different stages to reduce NMPDU is crucial.

Board 28

The Effects of Cigarette and Alcohol Use on the Initiation, Reinitiation, and Persistence of Cannabis Use

Lin HC, Jester J, Buu A

Objective: This study used a prospective survey to examine: (1) the effects of early onset and prior consumption of cannabis, cigarette, and alcohol use on later cannabis use initiation. reinitiation, and persistence; and (2) whether the quantity or frequency of alcohol or cigarette use was more predictive of cannabis use initiation, reinitiation, or persistence. Method: This study used data from the National Epidemiologic Survey of Alcohol and Related Conditions Wave 1 (2001–2002) and Wave 2 (2004–2005), including 27,741 non-users, 5,623 prior users, and 1,279 current cannabis users at baseline who were at risk of cannabis use initiation. reinitiation, and persistence, respectively, between baseline and follow-up assessments. Logistic regression was used to examine the effects of prior substance use on cannabis use initiation, reinitiation, and persistence, controlling for sociodemographics. **Results:** Frequency and early-onset status of cigarette (≤14 years) and alcohol use (≤17 years) predicted cannabis use initiation and reinitiation but not persistence. While considering the effects of early onset and consumption levels of cannabis use, baseline alcohol and cigarette use quantity and frequency did not predict persistent cannabis use. Frequency, compared with quantity, of alcohol and cigarette use was more predictive of cannabis use initiation and reinitiation. Conclusions: Early onset and prior experience of cannabis, cigarette and alcohol use could have effects on later cannabis use, varying among the three at-risk populations. It is crucial to break down the study population into different risk groups while examining prior substance use experiences and sociodemographics on later cannabis use, as prior substance experience and sociodemographics may have differential effects on different stages of cannabis use. Different strategies are needed for preventing cannabis use initiation, reinitiation, and persistence based on targeting early use of alcohol and cigarettes.

Board 29

Examining Factors Influencing Transit-Related Walking and Walking Duration *Yu CY, Lin HC*

Background: Walking as the most common and inexpensive form of adult physical activity offers health benefits such as the prevention of obesity and cardiovascular disease. The need to walk to and from transit provides a potential opportunity to promote general walking behaviors, yet related studies are lacking. This study examined the factors associated with transited-related walking and its duration by direction of a trip (to or from transit). **Methods:** This retrospective cross-sectional study used data from the 2009 National Household Travel Survey to explore likelihood and duration of transit-related walking. We employed the Heckman 2-step selection model to examine: (1) whether or not the respondents walked to and from transit; and (2) among those who walked to and from transit, how long the walk was. Two logistic and two loglinear regressions were performed, controlling for socio-demographic factors, Results: The mean walking duration to transit was shorter than from transit (7.6 vs. 7.87 minutes). Hispanics were more likely to walk both to (OR=1.17, p=0.032) and from (OR=1.89, p=0.023) transit and had higher walking durations than whites both to (β =0.10, p=0.033) and from (β =0.15, p=0.021) transit. Respondents living in low-income households were more likely to walk only to transit (OR=1.49, p=0.006). Higher population density was related to lower walking durations to and from transit (β =-0.35 and β =-0.18, both p<0.05). **Conclusions:** The study showed that (1) reducing home-to-transit distance could decrease walking duration to transit and increase transit-related walking; (2) transit stations in high density areas may feature connected street

networks and pedestrian-friendly access, which implies that urban designs involving built environments around transit stations play a crucial role in transit-related walking behaviors; and (3) white people were less likely to walk to transit, even when the walking duration was lower, implying that interventions and programs promoting transit-related walking could target white populations.

Board 30

Depiction of Electronic Cigarette Health Effects in Social Media

Merianos AL, Gittens OE, Mahabee-Gittens ME

Purpose: Electronic cigarettes, also known as e-cigarettes, have grown in popularity worldwide with the support of the Internet despite their unknown health benefits and risks. This study was conducted to assess the quantity, quality, and reach of e-cigarette health effects YouTube videos and to quantify the description of positive and negative e-cigarette health effects and promotional content in each video. Methods: Searches for e-cigarette health effects videos were conducted in 2015 using the YouTube search engine. E-cigarette health effects search terms were selected based on a Google Insights for Search analysis. An initial search of ecigarette health effects in YouTube videos indicated that these terms would retrieve more applicable and popular videos than other terms. The top 20 YouTube search results by relevance and view count were included to imitate typical Internet browsing behavior, previously established in the literature. Videos were classified by genres including educational/medical news, advertising/marketing, and personal/testimonial categories. Reviewers used a coding sheet to assess the presence or absence of negative health effects, positive health effects, and promotional content. Results: Of the 320 videos retrieved, 55 unique videos were included. The majority of videos (46.9%) were educational/medical/news, 29.7% were personal/testimonial, and 23.4% were advertising/marketing. The three most common negative health effects included discussing nicotine, e-cigarettes not being FDA regulated, and known and unknown health consequences related to e-cigarette use. The top positive health effects discussed were how e-cigarettes can help individuals guit smoking, e-cigarettes are healthier than smoking, and e-cigarettes have no smoke or secondhand smoke exposure. Conclusions: E-cigarettes were depicted as having negative and beneficial health effects despite inconclusive evidence on the safety of use. It is critical to monitor YouTube health effects content and develop appropriate messages to inform consumers about the potential risks associated with use while mitigating false and misleading information presented.

Board 31

The Association of Food Insecurity and Diabetes Differs By Sex and Socio-Economic Status among Older Adults

Hernandez DC, Murillo R, Ressor L

Purpose: Diabetes and food insecurity are highly prevalent among low-income older adults. In order to improve the current nutrition programs designed for older adults (e.g., Child and Adult Day Care Program; Older Americans Nutrition Program), it is important to identify subpopulations of low-income older adults by which food insecurity is a predictor of diabetes. The purpose of the study is to examine sex and socio-economic differences in the relationship between food insecurity and diabetes among older adults. Methods: Using the 2011 and 2012 National Health Interview Survey, we focused on respondents 60 years and older whose household income was ≤ 1.99% Federal Poverty Line (FPL), which are defined as low-income households and consequently most at risk for food insecurity (N = 5,772). Respondents were considered to be food insecure if they responded affirmatively to 3 or more of the 10-items on the USDA Food Security Scale. Diabetes status was self-reported. Covariates included age,

race, marital status, education, employment, income, health insurance, body mass index, number of children, and region. Controlling for demographic characteristics, logistic regression models were stratified by gender and FPL status [i.e. poor (FPL \leq .99%) and working poor (FPL 1.00 - 1.99%)] to estimate the odds that adults were diabetic. **Results:** In adjusted models, food insecurity predicted diabetes for poor females [Odds Ratio (OR) = 1.38, 95% Confidence Interval (CI) = 1.05 – 1.82, p < .05] and working poor females [OR = 1.65, CI = 1.24 – 2.20, p < .01] but not for poor and working poor males. **Conclusion:** Findings suggest that limited food resources and experiences with episodic hunger place older female adults at risk for diabetes. Nutrition programs designed for older adults should consider comprehensive diabetes education as a way to assist aging food insecure females with diabetes prevention and management.

Board 32

Latent Class Growth Modeling of Cigarette Smoking in a National Sample of Young Adults

Johnson AL, Villanti AC, Williams V, Rath JM, Vallone DM, Abrams DB, Hedeker D, Mermelstein RJ

This study examines longitudinal smoking trends based on self-reported smoking rate among ever smokers in two contemporary cohorts of young adults: a sample initially recruited as adolescents from the Chicago metropolitan area (SECAP; n = 927; 2011-2015), and a national sample of young adults aged 18-24 (Truth Initiative Young Adult Cohort Study, or "YA"; n = 983; 2011-2015). Smoking rate was derived from the number of days reported smoking a cigarette in the past month multiplied by the average number of cigarettes smoked per day, divided by 30 days. Employing latent class growth modeling, three distinctive smoking trajectories emerged from the analysis of each cohort: a low-smoking trajectory (n=687, 69% from YA and n=716, 77% from SECAP); a moderate -smoking trajectory (n=226, 23% from YA and n=155, 17% from SECAP); and a high-smoking trajectory (n=79, 8% from YA and n=56, 6% from SECAP). In both cohorts, the mean maximum smoking rate of the high-smoking trajectory (YA: 28 cigarettes/day; SECAP: 20 cigarettes/day) was approximately twice the smoking rate in the moderate-smoking (YA: 13 cigarettes/day; SECAP: 11 cigarettes/day) and over 13 times the rate in the lowsmoking trajectories (YA: 2 cigarettes/day; SECAP: 1 cigarette/day). In both cohorts, predictors of greater smoking intensity were being over age 21, non-Hispanic White, less educated, having depression or anxiety symptoms, engaging in other substance use, being financially independent, parental smoking, living with a smoker, and having friends or a partner who smokes (p's <0.05). In these studies, increased smoking behavior emerges as a mark of independence in young adulthood, though highly influenced by the social environment. Recognizing developmental patterns of smoking in young adults and social influences on these patterns will inform interventions to prevent initiation or escalation of tobacco use in this age group.

Board 33

Alternative Tobacco Products on Instagram: Methods of Social Media Analysis and Lessons Learned from Aggregated Data

Mary SM, Lauren M, Cheryl B

<u>Purpose</u>: Adolescents and young adults rely heavily on social media to communicate with peers about everyday activities. These communications can serve to normalize risky behaviors such as nicotine and tobacco use. Study is needed to confirm the presence and nature of messages about risky products. The purpose of this project, part of a larger study investigating alternative tobacco products on social media, is to illustrate use of aggregated databases of Instagram messages to learn about e-cigarette and little cigar (LC) use. **Method:**Preliminary

work revealed prevalent product hashtags used to define an Instagram search. Each database includes user profile data (i.e. metadata), the post URL, post comments, and hashtags. A descriptive analysis of metadata from 6,941 posts (#ecig) from one week in August, 2014 follows. A second database (n = 1622) was compiled from randomly selected posts of LC brand databases (#blacknmild, #swishersweets, #dutchmasters, #whiteowls). A quantitative content analysis was conducted to describe LC-related images and posters. Results: Following systematic data cleaning of irrelevant and broken links, #ecig metadata revealed heavy dominance (91%) of still photos over video images, little use of filters (25.7) or comments (med = 2). Hashtagging is heavy (med = 23) but location data rare (25.6%). Content analysis of the LC database revealed that the majority of Instagram users who posted LC related pictures are voung, white, males. Posts generally feature images of LC packaging, partially smoked products, and marijuana filled blunts. Posters typically showed no obvious corporate affiliation and most often created intentional arrangements of LC products rather than spontaneous snapshots. Conclusions: Though aggregation services are fee based, they can provide a useful means of observing realistic communications about public health risks. Knowing the conventions, challenges, and limitations of social media databases are central to tapping into this accessible data source for intervention and conter-messaging efforts.

Board 34

Changes In U.S. Cigarette Smoking Intensity by Age and Race: A Comparison of the 2002-2003 and 2010-2011 TUS-CPS

Yi Z, Mayorga ME, Hassmiller Lich KM, Pearson JL

Purpose: To date, smoking transition patterns have not been examined holistically using a U.S. national dataset, nor have they been compared over time to see if transition patterns have remained stable or shifted. The purpose of this study was to: 1) describe the likelihood of transitioning between smoking states by age and race/ethnicity; and 2) to compare these transition probabilities in 2002-2003 to transition probabilities in 2010-2011. Methods: Using the two most recent (2002-2003 & 2010-2011) longitudinal samples from the TUS-CPS, we computed transition probabilities for movement between cigarette smoking states (daily heavy, daily light, non-daily, former, and non-smoker). Transitions were statistically tested, comparing transitions for 18-34 vr olds vs. 35+ vr olds, and transitions for non-Hispanic white (NHW) vs. non-Hispanic black (NHB) adults. Results: Daily heavy smoking was "sticker" in 2003 than 2011, with 70.1% of daily heavy smokers 2002 remaining daily heavy smokers in 2003 and 53.7% remaining in this state in 2011; transition from heavy to former smoking status was more common in 2011 (25.3%) than 2003 (10%). Compared to 2003, a greater percentage of nondaily young adult smokers and NHB in 2011 transitioned to daily smoking and fewer transitioned to quitting. A reduction in the "stickiness" of heavy smoking for NHW smokers was evident when comparing 2003 and 2011 (74% vs. 66%), but no such reduction was observed for NHB heavy smokers (47.7% vs. 47.2%). **Conclusions:** Daily heavy smoking is less "sticky", but the majority of that reduction is attributable to changes among NHB smokers. Non-daily smoking among young adults and NHBs is more likely to lead to escalating smoking in 2011 than in 2003. These data will inform an in-progress Markov model examining how changing smoking transitions and the introduction of emerging tobacco products affects the public health burden of disease.

Board 35

A Nationally-Representative Study of Social Capital and Physical Activity: Does Race matter?

Lightner J, Heinrich K, Irwin B

Purpose: The majority of Americans do not engage in enough physical activity to receive health benefits. Social capital may play an important role in physical activity, yet no nationallyrepresentative studies have been conducted on the relationship between social capital and physical activity. Given that individuals of different races are exposed to different social environments, race may play an important role in the social capital-physical activity relationship. The purpose of this study was to examine the relationship between social capital and physical activity by race. Methods: Nationally-representative aggregated data from the 2013 and 2014 National Health Interview Surveys (N=71,254) were used for this study. Social capital was a latent variable created from questions asking about trust, connectedness, and assistance. Multiple group structural equation modeling was conducted to assess the association of social capital with self-reported physical activity by race with sex, age, income, education and location as covariates. Results: Social capital was positively related to white individuals' participation in moderate-, vigorous-intensity, and muscle-strengthening activity (β = .06, p < .001; β = .06, p < .001; $\beta = -.04$, p < .001, respectively). When a white individual's perception of social capital was high, they engaged in more moderate- and vigorous-intensity physical activity and less musclestrengthening activity. However, for non-white individuals, perception of social capital was significantly related to participation in moderate-intensity activity ($\beta = .04$, p < .05), where higher social capital was related to more moderate-intensity physical activity. Discussion: Social capital was related to different physical activity behaviors, depending on race. Targeting social capital to improve physical activity may be warranted for white communities, but less so for minorities vigorous-intensity and muscle-strengthening activities. Future research is needed to explain the key factors moderating the connection between social capital, race, and physical activity.

Board 36

Evidence Based Physical Education Programs: A Comparison using Physical Fitness and Weight Status Outcomes among Middle School Adolescents Gamble A. Erfle S

Background/Purpose: The Pennsylvania Department of Health developed a one-year pilot intervention to reduce obesity in middle school students (grades 6-8) through implementation of 30-minutes of daily physical education (PE). The main purpose of this investigation was to identify PE programs that improve health-related outcomes among overweight/obese (at-risk) youth. Methods: A natural quasi-experimental design was used to investigate the effects of evidence-based programs (EBPs) compared to non-EBPs on physical fitness (mile run, pushups, curl-ups) and weight status (BMI percentile) during one academic year. Intervention (27 schools; 6,362 students) and control (9 schools; 3,513 students) groups and four intervention subgroups were created: HOPSports® (9 schools: 2.066 students); SPARK™ (7 schools: 1.069 students); CATCH® (2 schools; 601 students); and non-EBP (9 schools; 2,626 students). Independent samples t-tests identified differences between the intervention subgroups and control groups. Standardized mean differences (SMD) determined effect size. Multiple linear regression analyses on change in BMI percentile for at-risk students in the intervention subgroups allowed for direct comparisons across programs. A difference between means t-test determined whether the peak performance EBP (bPeakEBP) was significantly better than other EBPs. Results: Comparisons across intervention subgroups suggested an overall dominance by HOPSports® (average SMD=0.33) and SPARK™ (average SMD=0.26) relative to the control

group. Superior outcomes were observed for females in HOPSports® (average SMD=0.35) and among males in SPARK™ (average SMD=0.32) and HOPSports® (average SMD=0.31). Among at-risk females, HOPSports® was significantly better than SPARK™ (p=.005) and CATCH® (p=.013), while among at-risk males, no significant differences emerged. Conclusions: This analysis supports the use of EBPs over non-EBPs to improve physical fitness and weight status among at-risk students. HOPSports® appears to be the most effective strategy to improve health-related outcomes for females. School administrators should commit to developing and implementing daily, active participation in an EBP as an investment in student health and education.

Board 37

Why Do They Do It? Key Factors Motivating Continued Participation in High-Intensity Functional Training through Crossfit

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Background: Few Americans (<21%) meet both the aerobic and muscle-strengthening physical activity guidelines, increasing chronic disease risk. Participation in CrossFit, coach-led, groupbased constantly varied high-intensity functional training that is modifiable to all fitness levels, facilitates meeting guidelines. CrossFit has recently exploded in popularity, with growth from five to >10,000 affiliates in the past 10 years. Understanding key influences motivating CrossFit participation may help address low population physical activity. This study investigated factors influencing CrossFit adherence. Methods: Participants (n=22) completed a 12-month CrossFit program evaluation study (ages 18-66 years, 50% female, 91% white, 23% Hispanic, 100% some college or more; 0-25 months previous CrossFit experience). At baseline and 12 months, participants indicated confidence in continuing CrossFit from 1 (not at all) to 10 (extremely). At 12 months, participants listed three current motivations for continuing CrossFit and rated the influence of 35 different factors on their CrossFit participation from -3 (Negative influence) to 3 (Positive influence). Current motivations were designated as intrinsic (influential) or extrinsic (limited influence), and data were analyzed with SPSS 20. Results: Baseline confidence for CrossFit adherence was high (8.9±0.8, range=7-10) and increased over time (9.2±1.0, range=7-10), although not significantly (p=.162). Most current motivations were intrinsic (n=65; e.g., fitness, skills, community, etc.), with three extrinsic (i.e., friend, looking good, competition). Key influential factors included workout intensity (2.7±0.5); atmosphere and coaches' personalities (both 2.6±0.7); coaches' knowledge (2.6±0.8); workout variety (2.6±1.0); learning new skills (2.5±0.5); and ability to scale workouts, coaches' leadership, coaches' support, and results (all 2.5±0.7). Workout variety was the item most frequently rated as 3 (positive influence; n=17). **Conclusion:** CrossFit adherers were very intrinsically motivated, perhaps facilitated by liking high-intensity and varied exercise. However, the social and community aspects were also highly valued. Future research should explore potential replicability of these key aspects in other exercise settings.

Board 38

iNosotros Corremos, Nosotros Jugamos! [We Run, We Play!]: Children's Perceptions of Physical Activity in Mexican-Heritage Border Communities

Stasi S, Sharkey J, Umstattd Meyer RM, Gómez ML, McClendon M, Bridges C **Introduction:** The burden of obesity disproportionately affects marginalized populations, such as Mexican-heritage (MH) children who reside in impoverished communities along the U.S.-Mexico border. These areas are occupied by a growing population of people who share a similar heritage, language, and socioeconomic standing; have unacceptably high rates of poverty and financial stress, childhood obesity, and physical inactivity; and limited access to resources. Understanding children's perspectives of their physical activity (PA) behavior is critical to inform PA promotion efforts in border communities. The purpose of this study is to identify positive and negative influences on MH children's current and desired PA. Methods: This study uses a multi-method approach, using both observation notes from four children's platicas (focus group discussions), and follow-up in-depth interviews with five children (ages 7-11 years; boys=2, girls=3) who participated in the platicas. Both field observations and transcribed interviews were coded to identify influences on MH children's current and desired PA. Results: Observations of MH children identified differences in use of language (Spanish and English) when referring to PA and differences between boys and girls. From the interviews, positive influences on children's PA behavior included parental support, access to PA equipment, support from siblings and other children, and parental permission to participate in PA at specific locations (e.g., home and neighbor's houses). Negative influences were lack of knowledge of types of PA opportunities available, parental restrictions, and environmental constraints (e.g., limited locations and unleashed dogs). Conclusions: The level of insight gained from eliciting children's perspectives of their PA behavior is helpful in understanding existing PA barriers and opportunities. Future efforts to promote PA among MH children would benefit from the consideration of children's perspectives regarding potential PA gaps within their community and their preferences for specific types of PA opportunities.

Board 39

Predicting College Students' Comfort in Their Recreational Environment

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Introduction: Research suggests that in conjunction with individual-based characteristics, the environment is a key determinant of physical activity (PA) behavior. Because of health benefits associated with regular PA, it is important the environment is supportive of such behavior. Oncampus recreation facilities provide college students easy access to PA equipment and are typically the central hub for student PA. However, research of on-campus PA environments is sparse. Because college PA participation is predictive of exercise habits in later years, determining factors that enhance a student's comfort in their collegiate PA environment should be investigated. **Methods:** Undergraduate students (n=189) completed surveys measuring comfort in the recreational facility environment, PA, exercise self-efficacy (SE), and social physique anxiety (SPA). Descriptive, bivariate, and regression analyses were conducted using SPSS. Results: Correlations revealed associations between comfort in the environment and days of strenuous activity (r=.252), SE (r=.406), SPA (r=.335), and identifying as someone who focuses on strength training during workouts (r=.299). The regression analysis (R2=.488, p<.0001) revealed relationships between comfort in the environment and SE (b=.198, p=.027). SPA (b=.240, p=0.001), identifying as someone who focuses on cardiovascular fitness during workouts (b=.358, p<0.001), identifying as someone who focuses on strength training during workouts (b=.188, p=0.008), weekly use of campus facilities (b=.474, p<0.001) and days per week of strenuous activity (b=-1.90, p=.032). Conclusion: This study reveals key factors

related to a college student's comfort in his or her recreational environment. Students that use facilities often are more likely to be comfortable in their environment, as well as those that have strong exercise identity in either cardiovascular fitness or strength training. Interestingly, days of strenuous activity was negatively associated with comfort in the environment, possibly due to discontent with dealing with crowds or waiting for equipment during peak hours. Future research should unpack these relationships further.

Board 40

Park Use and Physical Activity Among an Economically and Ethnically Diverse Sample of Adults

Greer AE, Castrogivanni B, Marcello R

Purpose: To examine park use and physical activity among an economically and ethnically diverse sample of adults. Methods: Adults (n=326) were purposively sampled and invited to complete a questionnaire about their park use (yes/no, parks visited, reasons for non-use) and physical activity (Godin Leisure Time questionnaire). Geographical Information Systems was used to calculate the distance from respondents' reported home address to their nearest park. The number of activity features (e.g., playgrounds, sports fields) in parks was determined using the Community Stakeholder Park Audit Tool. Descriptive, chi square, correlation, and independent t-test statistics were run using SPSS. Results: Most repondents were female (79.6%), non-Hispanic black (38.1%) or Hispanic (45.9%) and perceived their income as equal to (48.0%) or lower than (34.7%) the average American. Half (49.1%) of respondents were sufficiently active; 87.6% reported park use in the prior 6 months. Among sufficiently active respondents, 92.4% reported park use and 7.6% reported no park use [X2=6.538, df=1, p=.011]. Sufficiently active respondents also visited a greater number of parks on average (M=3.40, SD= 1.68) than insufficiently active respondents [M=1.68, SD=3.45; t(321)=4.006, p<.001]. Among park non-users, "Too far away" (11/6%) and "No features/equipment" (88.4%) were reported as park use barriers. There was no difference in park proximity between those who did (M=0.28 miles, SD=0.22) and did not (M=0.27, SD=0.17) report "Too far away" as a park use barrier [t(317)=.126,p=.916]. There was a significant difference in the average number of activity features in respodents' nearest park between those who did (M=5.27, SD=5.66) and did not (M=3.40. SD=4.23) report "No features/equipment" as a park use barrier [t(317)=2.422. p=.016]. Conclusion: Parks might best support physial activity in communities when activity features are carefully planned and equitably distributed across parks. Efforts to promote awareness of park locations might be warranted to reduce perceived proximity barriers.