Research Society on Marijuana

3rd Annual Scientific Meeting
July 26–28, 2019
Hilton Vancouver Washington
Vancouver, Washington

Who are we?

The Research Society on Marijuana (RSMj) is a network of scientists with the shared goal of promoting understanding through empirical research of the determinants, correlates, consequences, contexts, and assessment of marijuana use as well as the treatment of problematic marijuana use, including cannabis use disorder.

RSMj Guiding Principles

1. We are first and foremost a research society. Thus, we are guided by research in the marijuana field, not by any personal or political agenda.
2. We are a nonprofit organization. We will not be influenced by the profit motive. There are other organizations that may be sympathetic to our mission, but to maintain objectivity, we will not accept sponsorship from any for-profit or political advocacy group.
3. We are a society concerned with improving human adversity. Therefore, we focus most of our attention on furthering research that has immediate benefit to reduce human suffering or improve human well-being.

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THURSDAY, JULY 25, 2019

4:00pm – 7:00pm
Check-In/Registration
Discovery Ballroom Foyer

7:00pm – 10:00pm
Check-In/Registration
Social Event: Loowit Brewing
507 Columbia Street, Vancouver, WA 98660, Phone: (360) 566-2323

FRIDAY, JULY 26, 2019

8:00am – 5:00pm
Check-In/Registration
Discovery Ballroom Foyer

9:00am – 9:15am
Conference Opening/Introduction
Discovery Ballroom AB
Matthew R. Pearson (*University of New Mexico*)

9:15am – 10:05am
Keynote Address
Discovery Ballroom AB

Cognitive Behavioural Interventions for Cannabis Use Disorder: Timing, Technologies, and the Potential for Adjunctive Cannabinoid Replacement?

Jan Copeland (*University of New South Wales*)

FRIDAY, JULY 26, 2019

10:15am – 11:45am
Symposium
Discovery Ballroom A

Promising (and Not So Promising) Pharmacological Treatments for Cannabis Use Disorder

Chair: Matthew R. Pearson (*University of New Mexico*)

Despite the relatively low addictive potential of cannabis relative to other substances used for their euphoria-inducing properties (e.g., alcohol, tobacco, cocaine, heroin), the high rates of cannabis relative to many of these substances (e.g., cocaine, heroin, etc.) results in cannabis use disorder (CUD) being the third most prevalent substance use disorder (only behind alcohol and tobacco). To date, the U.S. Food and Drug Administration has approved of three medications for treating alcohol use disorder (acamprosate, disulfiram, and naltrexone), three medications for treating opioid use disorder (buprenorphine, methadone, and naltrexone), and six medications for treating tobacco use disorder (buproprion, varenicline, nicotine inhaler, nicotine spray pump, nicotine gum/lozenge, and nicotine transdermal patch). However, no medication is currently FDA-approved for treating cannabis use disorder (CUD). Thus, there is clearly a need to develop effective medications for treating CUD, but there are a number of challenges, including some general challenges to drug discovery in general as well as some specific challenges for treating CUD in particular. Matthew Pearson will present some perspective from systematic reviews and meta-analyses of pharmacotherapies for treating CUD. Kevin Gray will review the evidence base for N-acetylcysteine (NAC) as a treatment for CUD, highlighting differences found with adolescent vs. adult populations. Aimee McRae-Clark will review some new findings with oxytocin, progesterone, and varenicline as possible medications to treat CUD.

PRESENTERS:

What We Can Learn from Systematic Reviews and Meta-Analyses of Pharmacotherapies for Cannabis Use Disorder

Matthew R. Pearson (*University of New Mexico*), Jon Houck (*University of New Mexico*), Kevin S. Montes (*California State University Dominguez Hills*)

The Story of N-Acetylcysteine as a Pharmacotherapy for Cannabis Use Disorder

Kevin M. Gray (*Medical University of South Carolina*)

Novel Pharmacotherapy Targets for Cannabis Use Disorder Treatment

Aimee McRae-Clark (*Medical University of South Carolina*)

Discussant: Matthew R. Pearson (*University of New Mexico*)

FRIDAY, JULY 26, 2019

10:15am – 11:45am
Symposium
Discovery Ballroom B

Marijuana Use and Adolescents: Epidemiology, Policy, and Longitudinal Consequences

Chair: Douglas C. Smith (*University of Illinois at Urbana-Champaign*)

Adolescence is thought to be a developmentally-sensitive period, during which marijuana use may confer a heightened risk for consequences relative to use occurring later in development. This symposium addresses multiple topics related to marijuana use by adolescents, including: optimal screening procedures for heavy marijuana use among adolescents, developmental risk factors in adolescence that predict emerging adult co-use of marijuana and other substances, and whether adolescents residing near medical marijuana dispensaries use more marijuana than those living further away from them. Because research on marijuana among teens is a national priority in our current policy environment, the research in this symposium is critical. These studies use rigorous methods and large datasets to make novel contributions, extending our understanding of screening, risk and protective factors, and the impact of medical marijuana policies on adolescents.

PRESENTERS:

Sensitivity and Specificity of the CRAFFT to Identify Heavy Cannabis Use: Evidence from a Large Statewide Adolescent Sample

Douglas C. Smith, Kelly Clary, Carol Lee, Angus Lanker (*University of Illinois at Urbana-Champaign*)

Adolescent Risk Factors for Marijuana Co-use With Tobacco and Alcohol During Young Adulthood: A 10-year Longitudinal Study

Elizabeth J. D'Amico, Anthony Rodriguez, Eric R. Pedersen, Joan S. Tucker (*Rand Corporation*)

Proximity of Medical Marijuana Dispensaries and Adolescent Marijuana Use

Allison Salisbury, Douglas C. Smith, Shahana Begum (*University of Illinois at Urbana-Champaign*)

12:00pm – 1:00pm
LUNCH ON YOUR OWN

CENTER ON ALCOHOLISM, SUBSTANCE ABUSE, & ADDICTIONS

1:00pm – 2:30pm
Symposium
Discovery Ballroom A

Current Issues in the Measurement of Cannabis Use

Chair: Bradley T. Conner (*Colorado State University*)

While highly controlled lab studies provide exact information regarding cannabis administration, there are a limited number of researchers who are allowed to conduct cannabis administration research. Field research on cannabis use, while more common, is typically limited to self-report on established scales that may be missing key information. The first talk in this symposium will present data collected from regular-to-heavy cannabis users who provided quantity and potency information about their most recent retail cannabis purchase to assess links between cannabis potency and mental and physical health outcomes. The second talk provides data on a feasibility trial of a new smart vaporizer that provides automatic real-time data collection of quantity, potency, and frequency of cannabis concentrate use and allows for survey data collection that is prompted by cannabis use. The third talk in this symposium will present data comparing measures of cannabis use disorder and cannabis use motives across a sample comprised of both college students and veterans to determine if measures are invariant across samples. The goal of this research is to test whether construct definitions are the same across these two populations. The final study will present a qualitative analysis of data on patterns of cannabis use from a sample of regular-to-heavy recreational cannabis users to elucidate complex patterns of cannabis use across method of administration, time of day, and other key variables.

PRESENTERS:

The Relation Between Cannabis Potency and Mental and Physical Health Outcomes
Bradley T. Conner, Mark A. Prince (*Colorado State University*)

Automatic Realtime Data Collection of Cannabis Use
Mark A. Prince, Bradley T. Conner (*Colorado State University*)

Assessing Invariance of Marijuana Motives and Cannabis Use Disorder Assessments in Veterans versus College Students
Morgan L. Sneed, Samuel R. Davis, Theodore J. Fetterling, Mark A. Prince, Bradley T. Conner, Aaron Eakman (*Colorado State University*)

A Descriptive Study of Cannabis Use Patterns among Adult Users in Colorado
Elizabeth Ballinger-Dix, Jamie E. Parnes, Alexander Tyskiewicz, Bradley T. Conner (*Colorado State University*)

Discussant: Matthew R. Pearson (*University of New Mexico*)

1:00pm – 2:30pm
Symposium
Discovery Ballroom B

Washington State Marijuana Law: In the Forefront of Change

Chair: Louise Kaplan (*Washington State University*)

Washington State has both legalized medical and recreational marijuana and is the only state with the legally autho-rized role of medical marijuana consultant. This regulatory landscape presents an opportunity to explore a changing culture. This proposed symposium will provide a brief overview of the evolution of Washington State's marijuana laws since medical marijuana was first authorized in 1998, and subsequent implications for healthcare providers and patients. The role of health care professionals who authorize medical marijuana and the role of the medical marijuana consultant will be explained. The results of a statewide research study conducted in 2018 to determine the knowledge, attitudes and practices of health care professionals and medical marijuana consultants will be discussed. A portion of the symposium will describe key findings from this study regarding the sources of information used by health care professionals and medical marijuana consultants to advise patients and make decisions. The final component of the symposium will explore implications of legal access to marijuana for health care professionals and their patients, including those who suffer from chronic pain and use opioids.

PRESENTERS:

Washington State's Unique Medical and Recreational Marijuana Laws

Louise Kaplan (*Washington State University*)

The Washington State Health Care Professional and Medical Marijuana Study

Louise Kaplan, Janessa Graves (*Washington State University*)

Sources of Information Used by Washington State Health Care Professionals and Medical Marijuana Consultants: Has Science Gone up in Smoke?

Tracy Klein (*Washington State University)*

Implications of Washington State's Marijuana Laws for Health Care Professionals and Patients

Marian Wilson, Tracy Klein (*Washington State University)*

Discussant: Louise Kaplan (*Washington State University*)

2:45pm – 4:15pm
Symposium
Discovery Ballroom A

What People Think About the Effects of Cannabis: A Balanced View of Perceived Risks and Benefits

Chair: Benjamin Ladd (*Washington State University*)

Perceptions of risks and benefits of cannabis abound; many lay claims have mixed empirical support or lack support altogether. These perceptions have important implications in terms of cannabis use and health. Furthermore, research on the effects of cannabis often is one-sided and emphasizes only the negative consequences of cannabis use. This likely contributes to an incomplete picture of the factors related to cannabis use decision-making. This set of talks describe recent efforts to improve understanding of perceptions of cannabis health effects by taking a balanced approach to studying perceived risks as well as benefits in a range of populations. Dr. Fales will examine the perceived benefit of cannabis to manage pain in young adults with and without chronic pain. Dr. Teeters will explore the role of positive and negative expectancies of cannabis use on decisions to drive after having used. Ms. Pritschmann will look at cannabis and cannabis-free reinforcement and cannabis outcomes from a behavioral economic perspective. Finally, Dr. Magnan will examine prevalence and endorsement of users' and nonusers' beliefs around various positive and negative health consequences of cannabis. The goal of this symposium is to improve understanding of current perceptions of risks and benefits related to cannabis use and relative ratios of these two aspects in order to identify areas for future research inquiry (e.g., common anecdotal claims lacking scientific study) as well as establish potentially useful targets for intervention and prevention (e.g., correcting inaccurate beliefs, associations between motivations for use and cannabis-related harm).

PRESENTERS:

Young Adults Are Using Recreational Cannabis Products to Manage Their Pain: It Might Not Be Helping Them
Jessica Fales (*Washington State University*)

Negative Marijuana Expectancies are Associated with Driving after Marijuana Use
Jenni B. Teeters, Matthew J. Woodward, Shelby King (*Western Kentucky University*)

Associations Between Behavioral Economic Reward Value, Expectancies and Cannabis Use Outcomes
Ricarda Pritschmann, Ali Yurasek (*University of Florida*)

Identifying Perceptions of Risks and Benefits of Cannabis Use: Associations with Cannabis Use and Related Problems
Renee E. Magnan, Eric Malain, Benjamin Ladd (*Washington State University*)

Discussant: Benjamin Ladd (*Washington State University*)

FRIDAY, JULY 26, 2019

2:45pm – 4:15pm
Symposium
Discovery Ballroom B

Changing Marijuana Policy and its Potential Impact on Unintentional Injury

Chair: Renee M. Johnson (*Johns Hopkins University*)

Unintentional injuries are the leading cause of death for people aged 1-44 in the US. This symposium will provide a forum to examine the potential impacts of changing marijuana laws in the US on unintentional injury. The Chair will introduce the symposium and give an overview of the epidemiology of marijuana-associated injury, with a focus on traffic safety and poisoning (i.e., unintentional ingestion or overingestion of cannabis). The first presentation will address adolescent use of emerging modes of marijuana in Colorado. High levels of edible use, dabbing, and smoking may increase risk for overingestion and burns. The second presentation is a study of Colorado adults and describes their driving after having consumed marijuana. The third presentation builds on findings that pediatric healthcare contacts resulting from marijuana exposure increased in Colorado and Washington State following passage of recreational marijuana laws (RMLs); it presents an investigation of marijuana-related poison center calls among 0-24 year olds in Massachusetts. Storing poisonous substances in a manner that prevents child access has been an important strategy for poisoning prevention and is well-integrated into physician-based education for parents. The fourth presentation focuses on how Colorado parents store marijuana to gauge risk for childhood poisoning in the state. The Discussant will highlight key themes across the presentations and will discuss policy implications, present recommendations for injury prevention, describe key sources of data, and highlight gaps in knowledge.

PRESENTERS:

Modes of Marijuana Consumption Among Colorado High School Students

Renee M. Johnson (*Johns Hopkins University*),
Ashley Brooks-Russell (*University of Colorado Denver*)

Driving After Cannabis Use and Perceived Impairment Among Colorado Adults

Ashley Brooks-Russell (*University of Colorado Denver*)

Marijuana-related Poison Center Calls Among 0-24 Year Olds in Massachusetts Before and After Medical Marijuana Legalization

Jennifer M. Whitehill (*University of Massachusetts Amherst*),
Calla Harrington (*University of Massachusetts Amherst*), Cheryl Lang (*Boston Children's Hospital*),
Michael Chary (*Brigham and Women's Hospital*), Waqaas A. Bhutta (*Boston Children's Hospital*),
Michele M. Burns (*Boston Children's Hospital*)

Storage of Marijuana in the Home and Unintentional Ingestion Among Children

Janessa M. Graves (*Washington State University*),
Ashley Brooks-Russell (*University of Colorado Denver*)

Discussant: Ashley Brooks-Russell (*University of Colorado Denver*)

FRIDAY, JULY 26, 2019

4:30pm – 5:30pm
Poster Session I (see pages 21-23 for details)
Discovery Ballroom C

7:00pm – 10:00pm
Social Event: Heathen Brewery Feral Public House
1109 Washington Street, Vancouver, WA 98660, Phone: (360) 836-5255

SATURDAY, JULY 27, 2019

8:00am – 5:00pm
Check-In/Registration
Discovery Ballroom Foyer

9:00am – 9:50am
Keynote Address
Discovery Ballroom AB

Communicating about Cannabis: Safe, High Risk, Therapeutic, Cannabinoids, Evidence

Alan Budney (Dartmouth College)

10:00am – 11:45am
Symposium
Discovery Ballroom A

Ecological Momentary Assessment of Cannabis: Lessons Learned from Microlongitudinal Studies

Chair: Noah N. Emery (*Brown University*)

Ecological momentary assessment (EMA; Shiffman, 2009) leverages intensive repeated measures to capture moment-to-moment fluctuations in emotional, cognitive, and behavioral experiences in near real-time while participants are in their natural environment. This allows researchers to establish temporal precedence between variables of interest and to model differences between closely spaced successive time points across a single day or a series of days. As such, these microlongitudinal designs are uniquely suited to rapidly address key gaps in the literature. In the current symposium, we review cutting edge EMA research on how systematic changes in advance of quitting cannabis contribute to improved success rates during a quit attempt (Shrier et al.); we examine the effects cannabis use on sleep and social activity in older persons living with HIV (Henry et al.); we investigate the effects of cannabis use on the time course of positive and negative affect (Emery et al.); we examine how context of use moderates the relationship between use frequency and hazardous use (Wedel & Ansell); and review EMA data can be used to individualize treatment of cannabis use disorder (Litt). Finally, given her extensive experience using EMA to study the etiology and treatment of cannabis use, our discussant will provide a unique synthesis of these talks (Collins). Taken together, our symposium presents a wide range of EMA research on cannabis use, highlighting the diversity of research questions that can be answered using microlongitudinal designs.

PRESENTERS:

Changes In Cannabis Use-related Factors Prior to a Self-quit Attempt
Lydia A. Shrier (*Boston Children's Hospital/Harvard Medical School*), Ziming Xuan (*Boston University*), Sion Kim Harris (*Boston Children's Hospital/Harvard Medical School*)

Ecological Momentary Assessment of Cannabis Use in Older Persons Living with HIV: Relationships with Sleep and Social Activity
Brook L. Henry, Laura M. Campbell, Jessica L. Montoya, Emily W. Paolillo, Bin Tang, Caitlin Wei-Ming Watson, Raeanne C. Moore (*University of California San Diego*)

The Effect of Marijuana Use on the Time Course of Positive and Negative Affect in Daily Life
Noah N. Emery, Ryan W. Carpenter, Robert Miranda, Jr (*Brown University*)

Solitary Cannabis Use Moderates the Relationship Between Use Frequency and Hazardous Cannabis Use
Amelia V. Wedel, Emily B. Ansell (*Syracuse University*)

Individualized Assessment and Treatment Program (IATP) for Cannabis Use Disorder: Randomized Controlled Trial With and Without Contingency Management
Mark Litt (*University of Connecticut*)

Discussant: R. Lorraine Collins (*University at Buffalo*)

10:00am – 11:45am
Symposium
Discovery Ballroom B

Medical and Recreational Marijuana Laws in Adolescents and Young Adults: Where Do We Go from Here?

Chair: Silvia Martins (*Columbia University*)

Our symposium will present some of the latest findings of epidemiologic studies to identify changes in marijuana use and marijuana use disorder following marijuana policy changes in the United States. First, our symposium will address consequences of marijuana medical and recreational legalization in the US. Dr. Martins' study will present on data on marijuana use and opioid use after medical legalization using data obtained from the National Survey on Drug Use and Health (NSDUH) restricted use files, to examine these relationships across the 50 states from 2004-2016. She will also show changes in the prevalence, incidence and frequency of marijuana use and prevalence of marijuana use disorder changed following legalization of recreational marijuana use in Colorado, Washington, Alaska and Oregon from 2011 to 2016. Dr. Dilley's study will report on findings about adolescent groups who are relatively more at-risk following legalization. She will present on data from a study of the role of community policies on cannabis use and related public health outcomes following legalization in the Pacific Northwest (Oregon and Washington state). Dr. Johnson's study will characterize adolescents' reports of the modes of marijuana consumption in the early years of retail marijuana sales in Colorado, Washington, and Oregon. Data are from large, state-representative adolescent health surveillance systems, i.e., the Healthy Kids Colorado Surveys (HKCS), the Washington Healthy Youth Survey (HYS), and the Oregon Healthy Teens Survey (OHTS). Finally, Dr. Mauro will present associations between medical marijuana law (MML) status and screening/discussing marijuana or illegal drug use with health care providers in a nationally representative sample.

PRESENTERS:

Medical and Recreational Marijuana Laws: Effects on Marijuana and Opioid Outcomes in Adolescents and Young Adults
Silvia Martins (*Columbia University*), Pia Mauro (*Columbia University*),
Christine Mauro (*Columbia University*), Luis Segura (*Columbia University*),
Magdalena Cerda (*New York University*), Katherine Keyes (*Columbia University*),
Morgan Philbin (*Columbia University*), Natalie Levy (*Columbia University*),
Ava Hamilton (*Columbia University*), Melanie Wall (*Columbia University*),
Deborah Hasin (*Columbia University*)

Getting Into the Weeds: Identification of Youth At-risk Following Retail Cannabis Legalization in the Pacific Northwest
Julia Dilley (*Oregon Health Authority*)

SATURDAY, JULY 27, 2019

Modes of Marijuana Consumption Among High School Students in Colorado, Washington, and Oregon

Renee Johnson (*Johns Hopkins University*), Julia Dilley (*Oregon Health Authority*),
Johannes Thrul (*Johns Hopkins University*), Kayla N. Tormohlen (*Johns Hopkins University*),
Kristin E. Schneider (*Johns Hopkins University*), Ming Ma (*Johns Hopkins University*),
Arnold Levinson (*University of Colorado Denver*), Ashley Brooks-Russell (*University of Colorado Denver*)

Medical Marijuana Laws Are Associated with Screening and Discussing Marijuana Use with Health Care Providers: Findings Among Adolescents and Young Adults In 2015-2017

Pia Mauro, Melanie Askari, Silvia Martins (*Columbia University*)

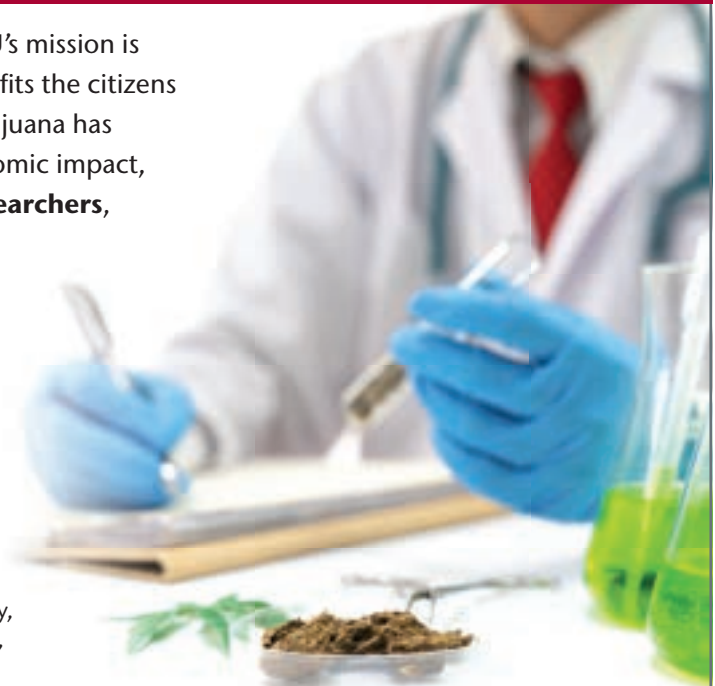**Discussant**: Jan Copeland (*University of New South Wales*)

12:00pm – 1:00pm
LUNCH ON YOUR OWN

1:00pm – 2:30pm
Symposium
Discovery Ballroom A

Concurrent and Simultaneous Use of Marijuana and Other Drugs: Current Research on Patterns of Use and Associated Consequences

Chair: Adrian J. Bravo (*University of New Mexico*)

Concurrent polysubstance use can be defined as the use of two or more substances within a given time period (e.g., over the past month or year) and can lead to dramatic health consequences due to the additive or interactive psychosocial or health effects of combining substances. Within the present symposium, we feature four presentations examining diverse research questions on the initiation and consequences of concurrent use (including simultaneous use) of marijuana and other drugs (e.g., alcohol, tobacco, cocaine) across various populations and methodologies. First, using population-based data, Dr. Cohn will present on findings on the relative proportion and correlates of youth and young adults who report trying alcohol vs tobacco vs marijuana first, and whether trying marijuana first (vs alcohol or tobacco first) increases risk for poly-substance use. Second, using population-based data, Dr. Lopez-Quintero will present data exploring the patterns and outcomes (including past-year substance use disorders) of drug co-use among subgroups of marijuana users (i.e., medical-only users, recreational-only users, or combined medical and recreational users). Third, Mr. Voss will present on findings examining correlates and potential functional impairment associated with alcohol and cannabis co-use in a diverse sample of young adult heavy drinkers. Fourth, Dr. Fairlie, will present on findings using ecological momentary assessment to examine day-to-day fluctuations in motives for using alcohol and/or marijuana among young adult substance users, and the extent to which motives predict the likelihood of simultaneous use. Finally, Dr. Bravo will discuss the clinical and research implications from these studies.

PRESENTERS:

Sequencing of Onset of Alcohol, Tobacco, and Marijuana Use and Implications for Single and Poly-substance Use in Youth and Young Adults

Amy M. Cohn, Amanda L. Johnson (*University of Oklahoma*)

Patterns of Drug Co-use and Drug Use Outcomes Among Medical and/or Recreational Marijuana Users

Catalina Lopez-Quintero (*University of Florida*)

Sources of Information Used by Washington State Health Care Professionals and Medical Marijuana Consultants: Has Science Gone up in Smoke?

Andrew T. Voss (*University of Memphis*), Ashley A. Dennhardt (*University of Memphis*), James MacKillop (*McMaster University*), James G. Murphy (*University of Memphis*)

Daily Motives for Alcohol and Marijuana Use as Predictors of Simultaneous Use Among Young Adults

Anne M. Fairlie (*University of Washington*), Megan E. Patrick (*University of Minnesota*), Jennifer M. Cadigan (*University of Washington*), Devon Alisa Abdallah (*University of Washington*), Mary E. Larimer (*University of Washington*), Christine M. Lee (*University of Washington*)

Discussant: Adrian J. Bravo (*University of New Mexico*)

1:00pm – 2:30pm
Symposium
Discovery Ballroom B

Customers, Retail Staff and "Stoners": Young Adults' New Roles and Identities in a Legal Marijuana State

Chair: Beatriz Carlini (*University of Washington*)

Before 2012, adult marijuana consumers in WA State relied on a black/gray market to sustain their use, and risked incarceration when engaging in commercial transactions to acquire or sell cannabis. Since legalization, young adult consumers have come "out of the shadows" and can now openly engage in the marijuana market landscape as consumers and cannabis industry professionals. They also have the opportunity to discuss their identity, practices and perspectives as marijuana consumers more openly, creating a window of opportunity for research. This symposium will present studies conducted by three University of Washington researchers, bringing a diverse perspective of how young adults navigate the legal marijuana landscape in Washington. Implications of these findings for prevention and treatment will be discussed.

PRESENTERS:

Marijuana Customers: Product Preferences Amongst Different Types of Young Adult Consumers

Devon Alisa Abdallah (*University of Washington*), Christine M. Lee (*University of Washington*), Rose Lyles-Riebli (*University of Washington*), Megan Patrick (*University of Minnesota*)

Cannabis Retail workers: Exploring the Potential of Budtenders as Harm Reduction Agents

Beatriz H. Carlini, Caislin Firth, Sharon Garrett, Robin Harwick (*University of Washington*)

Marijuana Identities: Developing and Examining Implicit Association Tests That Measure Associations Between Marijuana and The Self Among WA State Young Adults

Jason J. Ramirez, Christine M. Lee, Kristen P. Lindgren (*University of Washington*)

Discussant: Susan Stoner (*University of Washington*)

2:45pm – 4:15pm
Symposium
Discovery Ballroom A

Marijuana Use among Older Adolescents and Young Adults: Measurement, Rates, and Types of Use among Diverse Groups in the United States and Abroad

Chair: Eric Pedersen (*RAND Corporation*)

Older adolescents and young adults continue to be important groups to examine in marijuana studies given their higher rates of use compared to other age groups. Using large and diverse samples of adolescents and young adults, we present a series of talks increasing in global diversity, beginning with college students from one state and ending with college students from five different countries. First, we present on college student marijuana use in Colorado, a state where marijuana is legal for sale and possession, and describe a novel method for collecting detailed information regarding frequency and quantity of marijuana use across a variety of different products, potencies, and doses. Next, we present data from a large national epidemiological study on use among American Indians living on or near reservations, which is a population at risk for heavy and problematic substance use, but for which little is known about risk factors. Third, we present data from a large scale study of American college students studying abroad in foreign countries. We present prevalence rates of use abroad by gender and by country, and describe risk factors for heavier use abroad. Lastly, we present data from a large multinational study of college students in the United States, Argentina, Spain, Uruguay, and the Netherlands. Findings presented will describe high rates of use across countries with multiple cross-national differences on consumption patterns and contexts of use. Overall, our findings have important implications for assessment, prevention, and treatment of heavy marijuana use among young adults in the United States and abroad.

PRESENTERS:

**A Modified Timeline Followback For Marijuana:
A Simple Comprehensive Marijuana Use Assessment**

Mark A. Prince (*Colorado State University*)

Marijuana Use Patterns Among American Indian Youth

Olivia Bolts, Mark A. Prince, Linda Stanley, Randall Swaim (*Colorado State University*)

College Student Marijuana Use During Study Abroad Experiences

Eric R. Pedersen, Sarika Bharil, David Klein, Elizabeth D'Amico, Beth Ann Griffin (*RAND Corporation)*

**Examining Marijuana Use Prevalence and Context of Use in Five Countries:
Findings from the Cross-cultural Marijuana Study**

Adrian J. Bravo (*University of New Mexico*), Cross-Cultural Addictions Study Team

2:45pm – 4:15pm
Symposium
Discovery Ballroom B

Methodological Challenges in Cannabis Research

Chair: Robert Cook (*University of Florida*)

As state policies have begun to change and cannabis products have become more readily available to consumers, the opportunities to research health harms and benefits of cannabis have also increased. Despite an increase in research opportunities, cannabis research still faces significant barriers and challenges. As cannabis itself is a complex substance that cannot be reduced into a single pharmacological agent it poses significant methodological challenges. This symposium will examine and discuss methodological challenges in cannabis research specifically in recruitment, measurement of marijuana use, and issues determining the efficacy of marijuana for a therapeutic use. The first presentation will examine the barriers to recruiting hard-to-reach, hidden, or vulnerable populations in cannabis studies. The second presentation will discuss challenges and strengths of using the Marijuana Timeline Follow Back measurement in a multi-site research setting. The third presentation will explore the feasibility of using an ecological momentary assessment to determine real-time medical marijuana use among older adults with chronic pain. The final presentation will examine results from a scoping review to show common methodological challenges among medical marijuana efficacy studies.

PRESENTERS:

Recruitment and Retention of Hard-to-reach, Hidden and Vulnerable Populations In Cannabis Research

Shantrel Canidate (*University of Florida*)

Strengths and Challenges of Using the Marijuana Timeline Follow Back For a Multi-site Research Setting

Verlin Joseph (*University of Florida*), Paige Rickett (*Florida Department of Health*), Robert Cook (*University of Florida*)

Measuring Medical Marijuana Use in Older Adults: Feasibility and Preliminary Findings From a Study Using Ecological Momentary Assessment (EMA)

Yan Wang, Robert Cook (*University of Florida*)

Methodological Limitations and Barriers When Measuring The Efficacy of Medical Marijuana

Nichole E. Stetten, Jamie Pomeranz, Michael Moorhouse, Ali Yurasek, Amy V. Blue (*University of Florida*)

Discussant: Robert Cook (*University of Florida*)

4:30pm – 5:30pm
Poster Session II (see pages 23-26 for details)
Discovery Ballroom C

7:00pm – 10:00pm
Social Event: Warehouse 23
100 Columbia St. #102, Vancouver, WA 98660, Phone: (360) 750-7256

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SUNDAY, JULY 28, 2019

9:00am – 10:30am
Symposium
Discovery Ballroom AB

Risk, Resilience, Reasons, and Reduction: Factors Related to Marijuana Outcomes

Chair: Kirstyn N. Smith-LeCavalier (*Colorado State University*)

The present symposium explores multiply determined marijuana-related outcomes (i.e., marijuana use and consequences) and elucidates factors that increase risk or protect against these outcomes. More specifically, four symposium talks will address the associations between childhood factors, psychological well-being and happiness, potency of the product being used, frequency of use, and a brief intervention have on marijuana-related outcomes. The first talk will discuss how an increase in experienced adverse childhood experiences predicts an increased likelihood of trying marijuana, and at a younger age, while childhood resiliency predicts the frequency at which one later uses. The second talk explores how varying levels of happiness and the six facets of psychological well-being are closely related to one's motives, specifically for individuals who use for coping and conformity motives. The third talk focuses on how both the frequency at which one uses cannabis and the potency of the cannabis being used influences the effect of motives on marijuana-related consequences. The fourth talk will describe the development of a single-session, harm reduction intervention designed to reduce marijuana-related problems. More specifically, this study assesses the differences in marijuana-related outcomes between two interventions using motivational interviewing and psychoeducation that differ in content. The four talks will provide greater understanding of how adverse childhood experiences, resiliency, happiness, psychological well-being, the types of products being used, and a harm-reduction intervention contribute to the experience of marijuana-related outcomes which may inform future prevention and intervention efforts.

PRESENTERS:

Childhood Factors Predict Later Marijuana Initiation and Use

Jamie Parnes, Bradley Conner (*Colorado State University*)

An Examination of the Influence of Happiness and Psychological Well-being on Marijuana Use Motives and Marijuana-related Consequences

Kirstyn N. Smith-LeCavalier, Theodore J. Fetterling, Mark A. Prince (*Colorado State University*), Cross-cultural Addictions Study Team

Marijuana Use Motives Predict Marijuana-related Consequences Via Marijuana Use Frequency and Potency

Alexander J. Tyskiewicz, Shane D. Kentopp, Gemma Wallace, Bradley T. Conner, Mark A. Prince (*Colorado State University*)

Treating Marijuana-related Problems: A Brief Intervention

Theodore J. Fetterling, Mark A. Prince (*Colorado State University*)

Discussant: Mark A. Prince (*Colorado State University*)

10:45am – 12:00pm
Symposium
Discovery Ballroom AB

The Future of Cannabis Research: Promising Directions from Early Career Investigators

Chair: Matthew R. Pearson (*University of New Mexico*)

In the present context of legalization and medicalization of cannabis, applied cannabis research has reached an all-time high. The future of cannabis research will be greatly impacted by individuals who are presently choosing to focus their careers on cannabis. There are always significant time lags between the generation of a research question, conducting the study to answer the research question, and the dissemination of such findings to the field. The goal of this symposium is to highlight the ongoing and future research efforts by early career investigators. Each early career presenter will provide brief talks about an ongoing or future study, focusing on the importance of their study to the field. We anticipate that most of these researchers will present findings from these projects in the next few years. After each individual talk, all presenters will be invited to discuss critical research questions to the field that cross specific disciplines and research interests.

PRESENTERS:

Social Weedia: Social Media Research on Cannabis Use

> LaTrice Montgomery (*University of Cincinnati*)

Acute Stress Modulation of the Cannabis Cue-elicited Late Positive Potential: A Biomarker of Cannabis Use Disorder Risk Among Emotionally Vulnerable Cannabis Users

> Richard J. Macatee (*Auburn University*)

Marijuana and Me: Adapting the Implicit Association Test to Measure Associations Between Marijuana and the Self Among Late Adolescents

> Jason J. Ramirez (*University of Washington*)

Elucidating the Complex Interactions Between Socio-cultural, Neurocognitive and Drug-use-related Factors on Drug-use Trajectories

> Catalina Lopez-Quintero (*University of Florida*)

Using a System Science Approach to Understand the Dynamic Social Context of Adolescent and Young Adult Marijuana Use

> Pamela A. Matson (*Johns Hopkins University*), Sarah Flessa, (*Johns Hopkins University*),
> Leah Frerichs (*University of North Carolina at Chapel Hill*), Maria Trent (*Johns Hopkins University*),
> Kristen Hassmiller Lich (*University of North Carolina at Chapel Hill*)

Medical Marijuana Laws and Substance Use Disorder Treatment: Thinking Beyond Marijuana Use

> Pia Mauro (*Columbia University*)

Examining the Therapeutic and Adverse Effects of Diverse Cannabis-Based Products Using Real-Time Data

> Kevin S. Montes (*California State University Dominguez Hills*)

Discussant: Matthew R. Pearson (*University of New Mexico*)

POSTER SESSION I: FRIDAY, JULY 26, 2019 | 4:30 PM – 5:30 PM

1. **The Alcohol Policy Information System (APIS) as a Tool for Studying Effects of Cannabis Policy**
Elyse R. Grossman (*The CDM Group, Inc*), Gregory Bloss (*National Institute on Alcohol Abuse and Alcoholism*)

2. **Factors Related to Increasing Marijuana Use in the US between 2008-2009 and 2016-2017**
Susan A. Stoner *(University of Washington)*

3. **Age-Related Differences in Cannabis Product Preference**
Luna F. Ueno (*University at Albany, SUNY*), Maha Mian (*University at Albany, SUNY*), Brianna Altman (*University at Albany, SUNY*), Eric Giandelone (*High Yield Insights*), Mike Luce (*High Yield Insights*), Mitch Earleywine (*University at Albany, SUNY*)

4. **Cross-Cultural Examination of College Marijuana Culture in Five Countries**
Melissa Sotelo (*University of New Mexico*), Matthew R. Pearson (*University of New Mexico*), Adrian J. Bravo (*University of New Mexico*), Cross-Cultural Addictions Study Team

5. **Marijuana Use Patterns among Young Adults**
Devon Alisa Abdallah, Christine M. Lee, Rose Lyles-Riebli (*University of Washington*)

6. **An Alternative Option: Cannabis Substitution Decreases Other Drug Use Following Recreational Legalization**
Maha N. Mian (*University at Albany, SUNY*), Brianna R. Altman (*University at Albany, SUNY*), Luna F. Ueno (*University at Albany, SUNY*), Eric Giandelone (High Yield Insights), Mike Luce (High Yield Insights), Mitch Earleywine (*University at Albany, SUNY*)

7. **Marijuana and Alcohol Use Patterns across Education Levels**
Rose Lyles-Riebli, Devon Alisa Abdallah, Anne M. Fairlie, Jennifer C. Duckworth, Christine M. Lee (*University of Washington*)

8. **Marijuana Content on Twitter and Marijuana Use Among Teens**
Yoonsang Kim, Hy Tran, Sherry Emery (*NORC at the University of Chicago*)

9. **Marijuana Content on Digital Media and Marijuana Use Among US Young People**
Yoonsang Kim (*NORC at the University of Chicago*), Sherry Emery (*NORC at the University of Chicago*), Jidong Huang (*Georgia State University*)

10. **State-by-state Patterns of Marijuana Use Incidence Rates in the US from 2002-2017**
Karl C. Alcover, Abram J. Lyons, Morgan Kelly, Michael G. McDonell (*Washington State University*)

11. **Survey, Ingestion, or Lab? Examining Differences Among Volunteers in Cannabis Research**
Maha N. Mian, Brianna R. Altman, Luna F. Ueno, Rachel Luba, Mitch Earleywine (*University at Albany, SUNY*)

12. **Gender Bias in the Cannabis-Associated Problems Questionnaire (CAPQ): A Replication and Extension**
Brianna R. Altman, Maha N. Mian, Luna F. Ueno, Eliza Barach, Mitch Earleywine (*University at Albany, SUNY*)

13. **From A (abstain) to Z (zooted): Qualitatively Assessing Marijuana-related Terminology Among Late Adolescents and Young Adults in Washington State to Inform Development of Implicit Association Tests**
Elliot C. Wallace, Jason J. Ramirez (*University of Washington*)

14. **To Bake or Not to Bake? Individual Differences in Adverse Reactions to Cannabis**
Emily LaFrance, Amanda Stueber, Nicholas Glodosky, Dakota Mauzay, Aria Petrucci, Carrie Cuttler (*Washington State University*)

15. **Over Baked: Adverse Reactions to Cannabis**
Amanda Stueber, Emily LaFrance, Nicholas Glodosky, Aria Petrucci, Dakota Mauzay, Carrie Cuttler (*Washington State University*)

16. **Marijuana-related Perceptions as Mediators of the Association Between Trait Impulsivity and Marijuana Outcomes**
Margot Rheinhardt (*Colorado State University*), Mark Prince (*Colorado State University*), Angelina Pilatti (*Universidad Nacional de Cordoba*), Adrian J. Bravo (*University of New Mexico*), Cross-Cultural Addictions Study Team

17. **Chronic Marijuana Use, Inhibitory Control, and Processing Speed in Young Adult College Students**
Jessica M. Cavalli, Anita Cservenka (*Oregon State University*)

18. **Facets of Impulsivity are Differentially Associated with Marijuana Use Through Expectancy Effects: An Expanded Test of the Acquired Preparedness Model**
Caitlin A. Falco, Tess M. Kilwein, Kyle P. De Young, Lauren Zimmerman, Nick Livingston, Alison Looby (*University of Wyoming*)

19. **Measuring the Gap: Predictions from Dual-systems Theory**
Shane D. Kentopp, Gereon Fredrickson, Bradley T. Conner (*Colorado State University*)

20. **Effects of Menstrual Cycle Phase on Impulsivity and Cannabis Use in Female Cannabis Users**
Emma N. Cleary, Philip S. Santangelo, Julia E. Hooker, Emily B. Ansell (*Syracuse University*)

21. **Harassment and Marijuana Use Among Adolescents in Oregon Counties with Retail Availability of Marijuana**
Grisel Garcia-Ramirez (*University of California, Berkeley; Pacific Institute for Research and Evaluation, Prevention Research Center*),
Mallie J. Paschall (*Pacific Institute for Research and Evaluation, Prevention Research Center*)

22. **Anti-marijuana Motives: What Do They Tell Us?**
Andrew P. Weinstein, Clayton Neighbors
(*University of Houston*)

23. **Personality, Psychological Well-Being, Negative Affect, and Marijuana Consequences: A Moderated-Mediation Model**
Reagan E. Fitzke (*Colorado State University*),
Theodore J. Fetterling (*Colorado State University*),
Mark A. Prince (*Colorado State University*),
Adrian J. Bravo (*University of New Mexico*),
Cross-Cultural Addictions Study Team

24. **Do Attitudes About and Injunctive Norms for Alcohol and Marijuana Predict Simultaneous Use?**
Nicole Fossos-Wong (*University of Washington*),
Helene R. White (*Rutgers University*),
Alexander W. Sokolovsky (*Brown University*),
Jason R. Kilmer (*University of Washington*),
Ha-Yoon Lee (*University of Washington*),
Kristina M. Jackson (*Brown University*)

25. **Cannabis Expectancies and Future Time Perspective**
Mark J. Crisafulli (*University of Central Florida*),
Kathleen M. Palm Reed (*Clark University*),
Victoria Ameral (*Clark University*),
Michael E. Dunn (*University of Central Florida*)

26. **Marijuana Use and Perceived Descriptive Norms among 2-year and 4-year College Students**
Jennifer C. Duckworth, Christine M. Lee
(*University of Washington*)

27. **A Qualitative Study of the Perceptions of Marijuana Legalization among Cannabis Users and Non-users**
Willie Joseph, Lucas Ochoa, Kyana Morris, Denise Vidot
(*University of Miami*)

28. **Marijuana Use in Adolescence Predicted Alcohol and Drug-related Problems in Young Adulthood**
Maria M. Wong (*Idaho State University*)

POSTER SESSION II: SATURDAY, JULY 27, 2019 | 4:30 PM – 5:30 PM

1. **Individualized Assessment and Treatment Program (IATP) for Cannabis Use Disorder: Randomized Controlled Trial With and Without Contingency Management**
Mark Litt (*UConn Health*)

2. **Treating Synthetic Cannabinoid ("Spice") Dependence with Psychotherapy and Cannabinoid Replacement Therapy: A Case Report**
Tess M. Kilwein (*Denver Health Medical Center, University of Wyoming*),
Michelle Gaffaney (*Denver Health Medical Center, University of Colorado*),
Jeremy Kozak (*Denver Health Medical Center, Palo Alto University*),
Thom Dunn (*Denver Health Medical Center, University of Colorado, University of Northern Colorado*)

3. **Marijuana Negatively Impacts Other Health Behavior Change**
Kirk von Sternberg (*University of Texas at Austin*),
Liza Barros Lane (*Baylor College of Medicine*),
Mary M. Velasquez (*University of Texas at Austin*)

4. **Adaptation of Marijuana and Alcohol Use Among Participants in a Drunk Driving Intervention**
Michael Scherer (*The Chicago School for Professional Psychology*),
Eduardo Romano (*Pacific Institute for Research and Evaluation-PIRE*),
Tom Nochajski (*University at Buffalo*),
Amy Manning (*Pacific Institute for Research and Evaluation-PIRE & University at Buffalo*),
Robert Voas (*Pacific Institute for Research and Evaluation-PIRE*),
Eileen Taylor (*Pacific Institute for Research and Evaluation-PIRE*)

5. **Perceptions of Cannabis in Patients Receiving Treatment for Substance Use Disorder**
Allison Engstrom, Julia Holloway, Jennette Lovejoy, Jessica Wyse, Travis Lovejoy (*VA Portland Health Care System*)

6. **Childhood Emotional Abuse and Hazardous Use of Cannabis and Alcohol: The Mediating Role of Emotion Dysregulation**
Vanessa Joseph, Ruichen Sun, Amelia V. Wedel, Emily B. Ansell (*Syracuse University*)

7. **Examining the Relationships Between Anxiety Sensitivity, Interoceptive Awareness, and Cannabis Use**
Dakota Mauzay, Nicholas Glodosky, Amanda Stueber, Emily LaFrance, Carrie Cuttler (*Washington State University*)

8. **Changes in Anxiety Level are Associated with Changes in Marijuana-related Problems**
Sarah N. Elder (*Western Kentucky University*),
Robert E. McBride (*Western Kentucky University*),
Shelby A. King (*Western Kentucky University*),
Kathryn E. Soltis (*University of Memphis*),
James G. Murphy (*University of Memphis*),
Jenni B. Teeters (*Western Kentucky University*)

9. **Examining Trait Mindfulness as a Moderator of the Mediating Relationship between Social Anxiety, Using Cannabis to Cope, and Cannabis-Related Consequences**
Cody A. Raeder, Melissa R. Colangelo, James M. Henson
(*Old Dominion University*)

10. **Motives Matter: Marijuana Use Motives Moderate the Links between Stress and Negative Affect**
Nicholas Glodosky, Amanda Stueber, Emily LaFrance, Dakota Mauzay, Aria Petrucci, Carrie Cuttler (*Washington State University*)

11. **An Initial Trial of a Facebook Intervention for Depressed Cannabis Users**
Suzette Glasner (*UCLA*),
Danielle Ramo (*UCSF, Hopelab*),
Frances Kay-Lambkin (*The University of Newcastle),*
Alan Budney (*Dartmouth University*),
Helene Chokron Garneau (*UCLA*),
Alfonso Ang (*UCLA*)

12. **Sex Differences in the Association Between Depressive Symptoms and Marijuana Use and Related Consequences Among Nonmedical Prescription Stimulant-using US College Students**
Ha-Yoon Lee (*University of Washington*),
Nicole Fossos-Wong (*University of Washington*),
Anne M. Fairlie (*University of Washington*),
Jason R. Kilmer (*University of Washington*),
Mary E. Larimer (*University of Washington*),
Christine M. Lee (*University of Washington*),
Kathryn B. Vincent (*University of Maryland*),
Amelia M. Arria (*University of Maryland*),
M. Dolores Cimini (*University at Albany, SUNY*),
Karen Sokolowski (University at Albany, SUNY),
Geetha Subramaniam (*National Institute on Drug Abuse, NIH*),
David Liu (*National Institute on Drug Abuse, NIH)*

13. **Provider Perspectives on Mothers Using Marijuana During Pregnancy and Postpartum**
Crystal Lederhos Smith, Ekaterina Burduli, Olivia Brooks, Richa Mehta, Maria Gartstein, Celestina Barbosa-Leiker (*Washington State University*)

14. **Depressive Symptoms, Ruminative Thinking, Marijuana Use Motives, and Marijuana Outcomes**
Melissa Sotelo (*University of New* Mexico),
Adrian J. Bravo (*University of New* Mexico),
Matthew R. Pearson (*University of New* Mexico),
Cross-cultural Addictions Study Team

15. **Prevalence and Correlates of Medical Cannabis Patients' Use of Cannabis for Recreational Purposes**
Meghan E. Morean, Izzy R. Lederman (*Oberlin College*)

16. **Examining Marijuana Use as a Risk Factor for Discontinuity of Care Among Persons Living with HIV/AIDS**
Bryan Hartzler (*University of Washington*),
Beatriz H. Carlini (*University of Washington*),
Jason R. Williams (*University of Washington*),
Heidi M. Crane (*University of Washington*),
Elvin H. Geng (*University of California-San Francisco*),
W. Christopher Mathews (*University of California-San Diego*), Kenneth H. Mayer (*Harvard University*),
Richard D. Moore (*Johns Hopkins University*),
Michael J. Mugavero (*University of Alabama-Birmingham*),
Sonia Napravnik (*University of North Carolina-Chapel Hill*),
Benigno Rodriguez (*Case Western Reserve University*),
Dennis M. Donovan (*University of Washington*)

17. **Attitudes Toward Recreational Versus Medical Marijuana Among Medical Marijuana Users, Recreational Marijuana Users, and Marijuana Naïve Individuals**
Adams Bellows, Meghan Morean (*Oberlin College*)

18. **The Benefits of Using Only Medical Cannabis to Treat Chronic Pain Compared to Co-use with Opiate and Non-opiate Pain Medications**
Izzy R. Lederman, Meghan E. Morean (*Oberlin College*)

19. **Medical Marijuana's Impact on Patients with Chronic Pain: Looking Beyond an Individual's Level of Function**
Nichole E. Stetten, Jamie Pomeranz, Michael Moorhouse, Ali Yurasek, Amy V. Blue (*University of Florida*)

20. **Migraines and Cannabis Relief: Online Survey Results from Users in Legal States**
Leah Hitchcock, Laurel Gibson, Sophie YorkWilliams, Raeghan Mueller, Angela Bryan, Kent Hutchison, Cinnamon Bidwell (*University of Colorado, Boulder*)

21. **Use of Cannabis for Pain in Patients with Active Substance Use Disorders**
Julia Holloway, Allison Engstrom, Jessica Wyse, Jennette Lovejoy, Travis Lovejoy (*VA Portland Health Care System*)

22. **Bidirectional Relations Between Sleep Problems and Marijuana Use in a Nationally Representative Sample**
Tess K. Drazdowski (*Oregon Social Learning Center*)

23. **Heavy Marijuana Use and Risky Decision-making in Young Adult College Students**
Jorie Casey, Anita Cservenka (*Oregon State University*)

24. **Cannabis Use Predicts Indicators of Academic Problems Regardless of Academic Self-Efficacy**
Samuel M. DiCecco, Bradley T. Conner (*Colorado State University*)

25. **Cannabis- and Alcohol-Related Protective Behavioral Strategies: Evidence of Crossover Effects**
Brittany E. Blanchard (*Texas Tech University*),
Angela K. Stevens (*Brown University*),
Andrew K. Littlefield (*Texas Tech University*)

26. **The Effects of Health Beliefs on Marijuana Protective Behavioral Strategies**
Olivia Bolts, Alex Robredo, Mark Prince (*Colorado State University*)

27. **Identifying Classes of People who Endorse Marijuana-related Health Risks and Benefits**
Bethany R. Shorey-Fennell, Renee E. Magnan, Benjamin O. Ladd (*Washington State University*)

28. **Protective Behavioral Strategies Mediate the Relation of Happiness, Life Satisfaction, Psychological Well-Being on Marijuana-Related Consequences**
Kirstyn N. Smith-LeCavalier (*Colorado State University*),
Mark A. Prince (*Colorado State University*),
Cross-Cultural Addictions Study Team

29. **Runner's High...or High Runners? Exercise as a Motive for Marijuana Use**
Trevor J. Levingston, Luke M. Walker, Benjamin O. Ladd (*Washington State University Vancouver*)
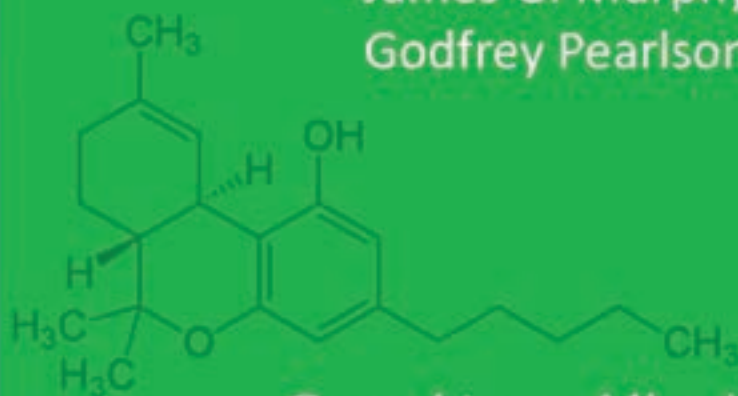
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