

# Research Society on Marijuana

## 2<sup>nd</sup> Annual Scientific Meeting

### July 28-30, 2018

### Colorado State University

### Fort Collins, CO

## **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.**

### **RSMj Board of Directors (in alphabetical order):**

**Adrian J. Bravo (Secretary-Treasurer)  
Renee M. Cloutier (Student Representative)  
Bradley T. Conner (Conference Program Co-Chair)  
Robert D. Dvorak (Vice President, Editor of *Cannabis*)  
Joel W. Grube (Public Policy Division Leader)  
Yifrah Kaminer (Youth Treatment Division Leader)  
Godfrey D. Pearlson (Neuroscience Division Leader)  
Matthew R. Pearson (President)  
Kristina T. Phillips (Conference Program Co-Chair)  
Ryan Rahm-Knigge (Student Representative, Conference Program Committee)  
Helene R. White (Epidemiology Division Leader)**

## **FRIDAY, JULY 27, 2018**

4:00pm – 7:00pm

**Check-In/Registration**

*Laurel Village Pavilion*

7:00pm – 9:00pm

**Check-In/Registration**

**Social Event: Tap and Handle**

*307 S College Ave., Fort Collins, CO 80524, Phone: (970) 484-1116*

## **SATURDAY, JULY 28, 2018**

8:00am – 9:00am

**Breakfast**

*Durrell Center Dining Hall*

9:15am – 9:30am

**Conference Introduction**

*Matthew R. Pearson (Center on Alcoholism, Substance Abuse, & Addictions, University of New Mexico)*

*Durrell Center Seminar Room AB*

9:30am – 10:15am

**Opening Plenary**

**How Cannabis Research and Cannabis Policy Can Inform Each Other**

*Susan Weiss (National Institute on Drug Abuse, NIDA)*

*Durrell Center Seminar Room AB*



## **SATURDAY, JULY 28, 2018**

10:30am – 12:00pm

### **Symposium**

#### **Brain Imaging in Relation to Both Acute and Chronic Cannabis Use**

**Chair:** Godfrey Pearlson (*Department of Psychiatry, Department of Neuroscience, Yale University*)

*Durrell Center Seminar Room AB*

Consequent on widespread medical marijuana legalization and recreational marijuana decriminalization/legalization, there is a growing need to understand cannabis' acute and longer-term effects on brain function and behavior, many facets of which are under-documented. This symposium will examine brain and behavioral consequences of acute cannabis use relevant to a variety of different contexts by describing emerging findings from our studies that employ task-based fMRI, resting state fMRI, and proton spectroscopy. To examine cognitive and brain consequences following acute use, we were interested in how single doses of vaporized cannabis impact behavioral performance on time-estimation and three separate measures of simulated driving behavior that represented different crucial aspects of motor vehicle operation. In particular, we wanted to document the time courses of these behavioral and brain changes, their relationship to administered dose and blood levels of THC and its metabolites and any differences attributable to baseline marijuana use frequency. Because of concerns about the drug's effect in younger individuals, particularly on memory function, we were especially interested in measuring brain metabolic effects using proton spectroscopy in relationship to robust functional MRI assessment of memory encoding. Overall, this symposium will attempt to showcase novel uses of MRI-based neuroimaging in the context of human marijuana neuroscience.

#### **Alterations in Resting State Functional MRI Connectivity Following Acute Doses of Cannabis**

*Shashwath Meda (Olin Research Center, Institute of Living)*

#### **Effects of Chronic Cannabis Use on Brain Proton Spectroscopy Measures, and Working Memory fMRI**

*Alecia Dager (Department of Psychiatry, Yale University)*

#### **Acute Cannabis Exposure Alters Behavior and Brain Activation on an fMRI Time Estimation Task**

*Michael Stevens (Olin Research Center, Institute of Living)*

#### **Disruption of Brain Circuits Involved in a Simulated Driving fMRI Task Following Acute Cannabis Exposure**

*Godfrey Pearlson (Department of Psychiatry, Department of Neuroscience, Yale University)*

**Discussant:** *Godfrey Pearlson (Department of Psychiatry, Department of Neuroscience, Yale University)*

12:00pm – 1:00pm

### **Lunch/Meet the Board**

*Adrian J. Bravo (Secretary-Treasurer), Renee M. Cloutier (Student Rep), Bradley T. Conner (Conference Program Co-Chair), Robert D. Dvorak (Vice President), Joel W. Grube (Public Policy Division Leader), Yifrah Kaminer (Youth Treatment Division Leader), Godfrey D. Pearlson (Neuroscience Division Leader), Matthew R. Pearson (President), Kristina T. Phillips (Conference Program Co-Chair), Ryan Rahm-Knigge (Student Rep), Helene R. White (Epidemiology Division Leader)*

*Durrell Center Dining Hall*

## **SATURDAY, JULY 28, 2018**

1:00pm – 2:00pm

**Poster Session 1 (see pages 12-13 for details)**

*Durrell Center Seminar Room C*

2:15pm – 3:30pm

**Symposium**

**Rehashing Approaches to Marijuana-Related Consequences: A Budding Area of Research**

**Chair:** *Jamie E. Parnes (Colorado State University)*

*Durrell Center Seminar Room AB*

Understanding physical and mental health risks of marijuana use is critical to harm reduction interventions. As such, research has extensively focused on understanding factors associated with negative consequences of use. While many antecedents of harm have been identified, there remain unexamined factors that may account for significant variance in negative consequences. Moreover, most literature to-date has measured consequences as a count of the number of negative consequences experienced. However, other consequence-related factors, such as the severity of reported consequences, or positive consequences, have yet to be examined. Other unexamined influences on negative consequences, such as price of marijuana, may help inform interventions. Four symposium talks will address unexamined factors and alternative ways of examining consequences of marijuana use. The first talk will focus on incorporating the marijuana purchasing task into understanding the relation between marijuana use motives (MUMs) and number of negative marijuana-related consequences experienced. This study examined the influence of marijuana price breakpoint (i.e., price at which one no longer purchases marijuana) as a potential mediating variable. The second talk examined how use relates to negative consequence count, consequence severity, and individual differences. The third talk examined if classes based on MUMs were associated with marijuana-related negative consequences and severity. The final talk will discuss the relation between MUMs and positive consequences of use. The four talks will provide greater understanding of marijuana consequences from various perspectives. Results may inform harm reduction interventions seeking to reduce negative consequence number and severity, as well as increase positive outcomes.

### **A Behavioral Economic Approach to Analyzing the Relations Between Marijuana Use Motives and Marijuana Related Consequences in Young Adults**

*Kirstyn N. Smith-LeCavalier, Samuel R. Davis, Mark A. Prince (Colorado State University)*

### **Negative Consequence Severity: What's the Worst That Can Happen?**

*Theodore J. Fetterling, Jamie E. Parnes, Samuel R. Davis, Mark A. Prince, Bradley T. Conner (Colorado State University)*

### **Marijuana Use Motives Relation to Frequency and Severity of Negative Consequences**

*Samuel R. Davis, Mark A. Prince, Bradley T. Conner (Colorado State University)*

### **Motivated to Feel Good: Marijuana Motives Predict Positive Consequences of Use**

*Jamie E. Parnes (Colorado State University)*

**Discussant:** *Jamie E. Parnes (Colorado State University)*



## **SATURDAY, JULY 28, 2018**

3:45pm – 5:00pm

### **Symposium**

#### **Co-Use of Marijuana with Alcohol and Tobacco among Young Adults: Current Research and Future Directions**

**Chair:** Adrian J. Bravo (*Center on Alcoholism, Substance Abuse, & Addictions, University of New Mexico*)

*Durrell Center Seminar Room AB*

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 effects of combining substances. Within the present symposium, we feature five researchers who have examined diverse research questions on the concurrent use of marijuana with either alcohol or tobacco among young adults. First, Dr. Pedersen will present on findings examining the effects of differing co-use patterns (e.g., simultaneous use vs using both, but on separate occasions) of marijuana and tobacco and their effects on negative consequences. Second, Dr. Prince will present on findings exploring the relations among a variety of alcohol and cannabis co-use patterns (i.e., use of alcohol and cannabis on the same day; alcohol first; cannabis first; alcohol last; cannabis last; simultaneous use) and alcohol and cannabis related consequences (both separately and combined). Third, Dr. Jackson will present on the predictive utility of simultaneous alcohol/marijuana (SAM) motives as compared to motives for drinking and marijuana use on substance use. Fourth, Dr. Villarosa-Hurlocker will present on findings testing motivational models of alcohol and marijuana use problems among college students who endorsed both past-month marijuana and alcohol use, and endorsed varying levels of social anxiety. Fifth, Dr. Bravo will present on findings comparing etiological models of protective behavioral strategies for both alcohol and marijuana among college student co-users. Finally, Dr. White will discuss the clinical and research implications from these studies.

#### **Co-Use of Marijuana with Tobacco and Nicotine Products among Young Adults**

Eric R. Pedersen, Joan S. Tucker, Rachana Seelam, Elizabeth J. D'Amico (*RAND Corporation*)

#### **Alcohol and Cannabis Co-Use and Consequences: The Role of Timing**

Mark A. Prince (*Colorado State University*), Kristina T. Phillips, Michael M. Phillips, Trent L. Lalonde (*University of Northern Colorado*)

#### **Using Marijuana and Alcohol Together: Specificity in Substance Use Motives among College Students**

Kristina M. Jackson, Alexander W. Sokolovsky, Kerri L. Hayes (*Brown University*), Helene R. White (*Rutgers University*)

#### **The Relationship Between Social Anxiety and Alcohol and Marijuana Use Outcomes: A Motivational Model of Substance Use**

Margo Villarosa-Hurlocker, Adrian J. Bravo, Matthew R. Pearson (*University of New Mexico*), Protective Strategies Study Team

#### **The Relationship Between Distal Antecedents and Alcohol and Marijuana Use Outcomes Among Dual Users: A Comprehensive Examination of Protective Behavioral Strategies**

Adrian J. Bravo, Andrew Weinstein, Matthew R. Pearson (*University of New Mexico*), Protective Strategies Study Team

**Discussant:** Helene R. White (*Rutgers University*)

## **SATURDAY, JULY 28, 2018**

5:00pm – 6:00pm

**Poster Session 2 (see pages 13-15 for details)**

*Durrell Center Seminar Room C*

7:00pm – 9:30pm

**Social Event: Horse and Dragon**

*124 Racquette Dr., Fort Collins, CO 80524, Phone: 970-631-8038*

*\*Bus transportation to and from this event will be provided.*

## **SUNDAY, JULY 29, 2018**

8:00am – 9:00am

**Breakfast**

*Durrell Center Dining Hall*

9:15am – 10:30pm

**Symposium**

**Dealing with the Frequently Comorbid Condition of Depression and Cannabis Use Disorder in Adolescents**

**Chair: Albert J. Arias (Yale University School of Medicine)**

*Durrell Center Seminar Room AB*

This symposium will deal with the frequently comorbid conditions of depression and cannabis use disorder (CUD). Dr. Chris Hammond will present on the literature linking depression and CUD, including epidemiology, and including the possible pathophysiological basis for comorbidity. CUD in adolescents is associated with clinically significant depression. Reliable data estimating the prevalence of significant depressive symptoms and major depressive disorder (MDD) in this population are scarce, although one estimate based on literature review is about 20 to 30% of adolescents with CUD are depressed. Depression and co-occurring drug use disorder in adolescents are associated with higher rates of alcohol use and alcohol use disorders, as well as greater risk of suicidal behavior. Multiple pathways to developing depression and CUD are possible, and there is data suggesting that some adolescents develop CUD after becoming depressed, and some develop depression after CUD. Another important clinical question is whether or not having depressive symptoms foils the treatment of substance use disorder. The second talk by Dr. Albert Arias will review a secondary analysis of the Cannabis Youth Treatment study of N=600 adolescents in treatment for CUD which asks that question and examines the relationship between depression and cannabis use over time in that sample. Lastly, Dr. Yifrah Kaminer will discuss research on treatment of CUD in adolescents, and will discuss how to deal with depression in this population, and with commentary on directions for further research.

**The Link Between Affective Disorders and Cannabis Use in Adolescents**

*Christopher J. Hammond (Johns Hopkins University)*

**The Impact of Depressive Symptoms on Cannabis Use Treatment Outcomes in Adolescents**

*Albert J. Arias (Yale University School of Medicine)*

**Research on the Treatment of Youth with Cannabis Use Disorder and Comorbid Conditions**

*Yifrah Kaminer (University of Connecticut Healthcare Center)*

**Discussant:** *Yifrah Kaminer (University of Connecticut Healthcare Center)*

## **SUNDAY, JULY 29, 2018**

10:45pm – 12:00pm

### **Symposium**

#### **Examining Both Sides of the Coin: Cannabis as Treatment Target and Potential Therapeutic Agent**

**Chair:** Eric R. Pedersen (*RAND Corporation*)

*Durrell Center Seminar Room AB*

Cannabis occupies a peculiar space among drugs. By some metrics, it has a lower addictive potential/abuse liability than most other drugs of abuse; however, given higher prevalence rates, cannabis use disorder is more prevalent than any of other illicit drug use disorder. In the United States, use/sale/possession of cannabis is federally illegal and it is listed as a Schedule I drug, which indicates that it is without medical value; however, 30 of 50 states permit the use of cannabis for medical purposes. In this symposium, researchers explore the different sides of cannabis in the context of treatment. Dr. Ozechowski reports the effects of enhanced supervision of Functioning Family Therapy, an evidence-based family-centered intervention, on marijuana-related outcomes among adolescents. In a sample of adolescents with alcohol use disorder (and majority with a cannabis use disorder), Dr. Kaminer examines how commitment to a harm reduction vs. abstinence goal affects cannabis outcomes. Dr. Houck observes incidental effects of treatment for alcohol use disorder on cannabis outcomes in patients from Project MATCH and COMBINE. Dr. Sisley reviews the barriers and discusses the implications of such barriers to conducting research examining the therapeutic potential of cannabis.

#### **Preventing Adolescent Marijuana Use with a Family-Centered Behavioral Health Intervention: A 12-month Follow-up Study**

Holly B. Waldron, Michael S. Robbins, Timothy Ozechowski, Hyman Hops, Charles W. Turner, Janet Brody (*Oregon Research Institute*)

#### **Adolescents in Treatment for Cannabis Use: Goal Commitment Predicts Outcome**

Yifrah Kaminer, Christine M. Ohannessian, Rebecca H. Burke (*Alcohol Research Center and Department of Psychiatry, University of Connecticut School of Medicine*)

#### **Incidental Effects of Treatment for Alcohol Use Disorder on Cannabis Use: Results from Project MATCH and the COMBINE Study**

Jon M. Houck (*Center on Alcoholism, Substance Abuse, & Addictions, University of New Mexico*)

#### **Slaying Dragons for Science--Navigating the Inexplicable Barriers to US Marijuana Efficacy Research**

Suzanne Sisley (*Scottsdale Research Institute*)

12:00pm – 1:00pm

### **Lunch/Champions of Science**

*Durrell Center Dining Hall*

1:00pm – 2:00pm

### **Poster Session 3 (see pages 15-17 for details)**

*Durrell Center Seminar Room C*



## **SUNDAY, JULY 29, 2018**

2:15pm – 3:15pm

### **Showcase**

#### **Introducing the Science of Cannabis**

**Chair:** Robert D. Dvorak (*University of Central Florida*)

*Durrell Center Seminar Room AB*

*Cannabis* is an open access peer-reviewed journal dedicated to the scientific study of marijuana/cannabis from a multidisciplinary perspective. Consistent with the mission of the Research Society on Marijuana (RSMj), the journal publishes 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. The journal covers research across the human spectrum (note that we currently do not accept animal model research). The journal seeks to publish the following (but not limited to these topics specifically):

- translational research at the chemical/biological level
- etiological mechanisms of use
- issues related to clinical factors (i.e., diagnosis)
- medical relevance (i.e., treatment effects/implications)
- clinical trials
- social and behavioral aspects of use (both positive and negative)
- sociopolitical, economic, legal, ethical, and regulatory issues.

In this session, Dr. Dvorak, the editor of RSMj's flagship journal, *Cannabis*, along with selected authors will highlight the articles published in the first volume of *Cannabis*.

#### **Stress as a Moderator of the Effects of Coping Motives on Alcohol and Marijuana Use in Young Adulthood**

Helene R. White (*Rutgers, The State University of New Jersey*), Kristen G. Anderson (*Reed College*), Jordan Beardslee (*Arizona State University*)

#### **Use of Protective Behavioral Strategies among Young Adult Veteran Marijuana Users**

Eric R. Pedersen (*RAND Corporation*), Margo C. Villarosa-Hurlocker (*University of New Mexico*), Mark A. Prince (*Colorado State University*)

#### **Driving Under the Influence of Cannabis: An Examination of Driving Beliefs and Practices of Medical and Recreational Cannabis Users Across the United States**

Carrie Cuttler (*Washington State University*), Michelle Sexton (*University of California San Diego*), Laurie K. Mischley (*Bastyr University Research Institute*)

#### **Online Methods for Locating Medical Marijuana Dispensaries: Practical Considerations for Future Research**

Eric R. Pedersen, Megan Zander-Cotugno, Regina A. Shih, Joan S. Tucker, Michael S. Dunbar, Elizabeth J. D'Amico (*RAND Corporation*)

#### **The Indirect Effects of Self-Efficacy on Cannabis Use Via Cannabis Protective Strategies: A Preliminary Study**

Eleftherios M. Hetelekides (*University at Buffalo*), Alexander J. Tyskiewicz (*Colorado State University*), Mark A. Prince (*Colorado State University*), R. Lorraine Collins (*University at Buffalo*)

## **SUNDAY, JULY 29, 2018**

3:30pm – 4:45pm

### **Symposium**

#### **Measuring Marijuana: Assessment Challenges and Our Partial Solutions**

**Chair:** Matthew R. Pearson (*Center on Alcoholism, Substance Abuse, & Addictions, University of New Mexico*)

*Durrell Center Seminar Room AB*

Every known drug of abuse has dose-dependent effects. In the context of increased medicalization and legalization of marijuana (or cannabis) in the United States and throughout the world, there is a rising pressure to quantify the risks and benefits of marijuana use. However, the crude assessment of marijuana use is at best obscuring and at worst preventing our ability to detect the associations between marijuana use and important outcomes. A review of the marijuana literature reveals that there are two primary ways that marijuana (or cannabis) use is assessed: 1) user status (a comparison of marijuana users and non-users with various time windows: past month, past year, lifetime, etc.) and 2) marijuana use frequency (i.e., number of days used in the past 30 days). Unfortunately, marijuana use quantity is not typically measured and there is no clear gold standard for assessing marijuana use quantity. The lack of a gold standard measure of marijuana is not befuddling. There are several challenges with assessing marijuana use. Marijuana is available in many different preparations including flower, concentrate, and edible preparations. These products can have different routes of administration (e.g., smoking, vaping, eating) and there is not a standard apparatus for most of these (e.g., bowl/bong sizes vary). Even within each preparation, potency of marijuana varies significantly. In the present symposium, each presentation will measure marijuana use in a unique way to overcome some of the limitations mentioned above, and we will discuss how the field can improve upon the measurement of marijuana use.

#### **Marijuana Use Grid: A Brief, Comprehensive Measure of Marijuana Use**

Matthew R. Pearson (*Center on Alcoholism, Substance Abuse, & Addictions, University of New Mexico*), Marijuana Outcomes Study Team

#### **Quantifying Cannabis: A Field Study of Marijuana Quantity Estimation**

Mark A. Prince, Bradley T. Conner (*Department of Psychology, Colorado State University*) Matthew R. Pearson (*Center on Alcoholism, Substance Abuse, & Addictions, University of New Mexico*)

#### **Introducing the Daily Sessions, Frequency, Age of Onset, and Quantity of Cannabis Use Inventory (DFAQ-CU)**

Carrie Cuttler, Alexander Spradlin (*Department of Psychology, Washington State University*), Protective Strategies Study Team (PSST)

#### **Examining the Role of Potency on Marijuana Use and Problems Utilizing Retrospective Self-Report and Ecological Momentary Assessment**

Benjamin O. Ladd, Renee E. Magnan (*Department of Psychology, Washington State University Vancouver*)

**Discussant:** Matthew R. Pearson (*Center on Alcoholism, Substance Abuse, & Addictions, University of New Mexico*)

## **SUNDAY, JULY 29, 2018**

5:00pm – 5:45pm

### **Closing Plenary**

#### **The Complex, Bi-Directional & Nuanced Associations between Cannabis and Posttraumatic Stress Disorder**

Marcel O. Bonn-Miller (*University of Pennsylvania Perelman School of Medicine*)

*Durrell Center Seminar Room AB*



7:00pm – 9:00pm

### **Social Event: Café Vino**

*1200 S College Ave., Fort Collins, CO 80524, Phone: 970-212-3399*

## **MONDAY, JULY 30, 2018**

8:00am – 9:00am

### **Breakfast**

*Durrell Center Dining Hall*

9:15am – 10:15am

### **Membership Meeting**

#### **Envisioning RSMj's Future Together**

*Durrell Center Seminar Room AB*

10:30am – 12:00pm

### **Panel Discussion**

#### **How Science Should (or Should Not) Inform Cannabis Policies**

*Durrell Center Seminar Room AB*

**1. Marijuana Policy Research Tool**

Mike Hilton (National Institute on Alcohol Abuse and Alcoholism)

**2. Trauma Cues Elicit Greater Conditioned Craving Responses than Do Cannabis Cues in Cannabis Users with Trauma Histories**

Ioan T. Mahu (Dalhousie University), Pablo Romero-Sanchiz, (Dalhousie University), Tristan Park (Dalhousie University), Jennifer Swansburg (Dalhousie University), Joshua Salmon (Dalhousie University), Mohammed Al-Hamdani (Dalhousie University), Daniel Rasic (Dalhousie University), Sean Barrett (Dalhousie University), Sherry H. Stewart (Dalhousie University)

**3. PTSD Symptom Severity and Cannabis Use: The Moderating Role of Race/Ethnicity**

Alisa Payne (University of North Texas), Nathan Kearns (University of North Texas), Renee Cloutier (University of North Texas), Quadreon Miller (University of North Texas), Anabel Potts (University of North Texas), Heidemarie Blumenthal (University of North Texas)

**4. The Intersectionality of Race, Biological Sex, and Past 30-Day Marijuana Use Among Trauma Exposed Emerging Adults**

Caitlyn N. Carey (University of North Texas), Nathan T. Kearns (University of North Texas), Quadreon K. Miller (University of North Texas), Alisa C. Payne (University of North Texas), Melissa N. Whitted (University of North Texas), Heidemarie Blumenthal (University of North Texas)

**5. Mental Health Symptoms and Marijuana Consequences: Protective Behavioral Strategies as a Mediator**

Jenae B. Lynch (University of New Mexico), Andrew P. Weinstein (University of New Mexico), Matthew R. Pearson (University of New Mexico), Marijuana Outcomes Study Team

**6. Cannabis and Schizotypy: Revisiting an Old Problem**

Brittany E. Blanchard (Texas Tech University), Angela K. Stevens (Texas Tech University), Andrew K. Littlefield (Texas Tech University)

**7. Sleep Difficulties, Marijuana Use, and Suicidal Behaviors in Adolescents**

Maria M. Wong (Idaho State University)

**8. Insomnia Symptoms, Protective Behavioral Strategies for Marijuana and Hazardous Marijuana Use among College Students**

Maria M. Wong (Idaho State University), Bianca Montoya (Idaho State University), Elizabeth Craun (Idaho State University), Protective Strategies Study Team

**9. Changes in Stress Levels and Cannabis Use Quantity across the Menstrual Cycle: A Pilot Study**

Kayla M. Joyce (Dalhousie University), Nacera Hanzal (Dalhousie University), Philip Tibbo (Dalhousie University), Kimberley P. Good (Dalhousie University), Sherry H. Stewart (Dalhousie University)

**10. Acute Use of High Potency Cannabis on Circulating Anandamide**

Raeghan L. Mueller (University of Colorado Boulder), Sophie L. YorkWilliams (University of Colorado Boulder), Kent E. Hutchison (University of Colorado Boulder), Timothy Helmuth (University of Colorado Boulder), Angela D. Bryan (University of Colorado Boulder), L. Cinnamon Bidwell (University of Colorado Boulder)

**11. Exploring The Relationship Between Gender and THC Levels Following Ad Libitum Cannabis Intoxication**

Sophie L. YorkWilliams (University of Colorado Boulder), Raeghan L. Mueller (University of Colorado Boulder), Kent E. Hutchison (University of Colorado Boulder), Angela D. Bryan (University of Colorado Boulder), L. Cinnamon Bidwell (University of Colorado Boulder)

**12. Oral Microbiota Characteristics of Cannabis, Cigarette, and Alcohol Use and Co-Use**

Jarrod M. Ellingson (University of Colorado Boulder), Raeghan Mueller (University of Colorado Boulder), Kent Hutchison (University of Colorado Boulder)

**13. Does the Form of Marijuana Use Impact the Relation between Marijuana Use Motives and Daily Frequency?**

Chelsea L. Banks (University of Northern Colorado) Lillian J. Canfield (University of Northern Colorado) Alexa J. Pellegrino (University of Northern Colorado) Maryia M. Schneider (University of Northern Colorado) Megan H. Smith (University of Northern Colorado) Anastasia Robirds (University of Northern Colorado) Erica B. Peteja (University of Northern Colorado) Kerry D. Duck (University of Northern Colorado) Michael M. Phillips (University of Northern Colorado) Kristina T. Phillips (University of Northern Colorado)

**14. Who Volunteers for Cannabis Research? Examining Potential Participation in Cannabis Research among Emerging Adults**

Maha N. Mian (University at Albany, SUNY), Brianna Altman (University at Albany, SUNY), Mitch Earleywine (University at Albany, SUNY)

**15. Are We Asking the Right Questions: Results of a Pilot Study on Marijuana Use Patterns and Terminology**

Kerri Hayes (Brown University), Helene R. White (Rutgers University), Sheila Vandal (Brown University), Kristina M. Jackson (Brown University)

**16. A Person-Centered Approach to Investigate Relations Among Substance User Profiles and Impulsivity**

Molin Shi (Texas Tech University), Andrew K. Littlefield (Texas Tech University)

**17. Marijuana Use Patterns among College Students: Promise of Probing User Heterogeneity**

Melissa Sotelo (University of New Mexico), Adrian J. Bravo (University of New Mexico), Matthew R. Pearson (University of New Mexico), Marijuana Outcomes Study Team

**18. Antecedents, Contexts, and Consequences of Marijuana Use: A Comprehensive Review of Microlongitudinal Studies**

Sarah L. Simons (University of New Mexico), Gabriel J. Carrion-Gonzalez (University of New Mexico), Matthew R. Pearson (University of New Mexico)

**19. Marijuana Trajectories in Canadian Youth: Associations with Substance Use and Mental Health**

Gabriel J. Merrin (University of Victoria), Kara Thompson (St. Francis Xavier University), Megan E. Ames (University of Victoria), Bonnie Leadbeater (University of Victoria)

**POSTER SESSION 2: SATURDAY, JULY 29, 2018 5:00 PM – 6:00 PM**

**1. Campus Climate Matters: The Impact of Racial Microaggressions on Marijuana Use among Undergraduate Students of Color**

Miesha Marzell (Binghamton University), Woojae Han (Binghamton University), Elora Orazio (Binghamton University), Tess K. Drazdowski, Ada Robinson-Perez

**2. Greater Past Month and Lifetime Marijuana Use are Associated with Poorer Cognitive Flexibility in Young Adult College Students**

Sarah Lahanas (Oregon State University), Anita Cservenka (Oregon State University)

**3. Perceived Risk, Perceived Addictive Potential, and Protective Behavioral Strategies' Impact on Marijuana Outcomes**

Andrew P. Weinstein (University of New Mexico), Matthew R. Pearson (University of New Mexico), Marijuana Outcomes Study Team

**4. The Influence of Mentor Relationship Quality on Marijuana Use during the Campus Connections Mentoring Program**

Gereon Fredrickson (Colorado State University), Shelley Haddock (Colorado State University), Kimberly Henry (Colorado State University)



**5. Does Marijuana Use Impact Academic Performance in the College Setting?**

Erica B. Peteja (University of Northern Colorado), Kerry D. Duck (University of Northern Colorado), Anastasia Robirds (University of Northern Colorado), Megan H. Smith (University of Northern Colorado), Alexa J. Pellegrino (University of Northern Colorado), Lillian J. Canfield (University of Northern Colorado), Maryia M. Schneider (University of Northern Colorado), Chelsea L. Banks (University of Northern Colorado), Kristina T. Phillips (University of Northern Colorado), Michael M. Phillips (University of Northern Colorado)

**6. Impulsivity-like Traits, Use of Protective Behavioral Strategies, and Marijuana-Related Outcomes**

Chloe J. Espinosa (University of New Mexico), Adrian J. Bravo (University of New Mexico), Matthew R. Pearson (University of New Mexico), Marijuana Outcomes Study Team

**7. Examining Protective Behavioral Strategies as a Mediator in the Relationship between Social Anxiety and Cannabis-Related Consequences**

Cody A. Raeder (Old Dominion University), Matthew R. Pearson (University of New Mexico), Adrian J. Bravo (University of New Mexico), Protective Strategies Study Team

**8. Meaning in Life and Sensation Seeking on Marijuana Use**

Cara L. Fresquez (Colorado State University), Alexander J. Tyskiewicz (Colorado State University), Theodore J. Fetterling (Colorado State University), Mark A. Prince (Colorado State University)

**9. The Role of Risk Seeking, Negative Urgency, and Perseverance in Marijuana Use Frequency and Marijuana Related Consequences**

Alexander J. Tyskiewicz (Colorado State University), Jamie E. Parnes (Colorado State University), Bradley T. Conner (Colorado State University), Marijuana Outcomes Study Team

**10. Individual Difference Factors Influencing Cannabis Non-Use Motives**

Reagan E. Fitzke (Colorado State University), Samuel R. Davis (Colorado State University), Mark A. Prince (Colorado State University), Randall C. Swaim (Colorado State University), Linda Stanley (Colorado State University)

**11. Examining Predictors of Initial Marijuana Engagement Using Recursive Partitioning**

Gemma T. Wallace (Colorado State University), Bradley T. Conner (Colorado State University), Audrey M. Shillington (Colorado State University)

**12. Pathological Personality Traits and Hazardous Cannabis Use**

Nicole E. Ellerbeck (Syracuse University), Emily B. Ansell (Syracuse University)

**13. Marijuana Expectancies as a Predictor of Substance Use Initiation among High School Students**

Kevin S. Montes (University of New Mexico), Katie Witkiewitz (University of New Mexico), Matthew R. Pearson (University of New Mexico), Adam M. Leventhal (University of Southern California)

**14. Cognitive and Behavioral Risk Correlates of Marijuana Use by Older Adults**

Susan A. Stoner (University of Washington)

**15. Illuminating the Increasing Use of Cannabis among Older Coloradans**

Brian Kaskie (University of Iowa), Sara Qualls (University of Colorado)

**16. From Profane Illumination to Mundane Illumination – A Socio-Cultural Analysis of Marijuana in the New York Times 1990 – 2015.**

Andrew D. Horvitz (SUNY New Paltz)

**17. A Meta-Analytic Investigation of the Associations between Cannabis Use and Negative Consequences**

Gabriel J. Carrion-Gonzalez (University of New Mexico), Sarah L. Simons (University of New Mexico), Matthew R. Pearson (University of New Mexico), Marijuana Outcomes Study Team

**18. Predicting and Preventing Early Onset Marijuana Use: The Cumulative Influence of Risk and Protective Factors**

Gabriel J. Merrin (University of Victoria), Bonnie J. Leadbeater (University of Victoria), Clea Sturgess (University of Victoria), Megan Ames (University of Victoria), Kara Thompson (St Francis Xavier University)

**19. Identification of a Brief Screen to Detect Severe Cannabis Use Disorder among Adjudicated Adolescents**

Sara G. Balestrieri (University of Rhode Island), Daniel J. Delaney (University of Rhode Island), Shayna S. Bassett (University of Rhode Island), L.A.R Stein (University of Rhode Island)

**POSTER SESSION 3: SUNDAY, JULY 30, 2018      1:00 PM – 2:00 PM**

**1. Incidental Effects of Naltrexone Maintenance on Cannabis Use in the COMBINE Study**

Jon M. Houck (University of New Mexico)

**2. Repetitive Transcranial Magnetic Stimulation of the Medial Prefrontal Cortex for Reduction of Polysubstance Use Craving: A Pilot Study**

Jordan A. Gette (Texas Tech University), Gavin K. Ueland (Texas Tech University), Andrew K. Littlefield (Texas Tech University), Yi-Yuan Tang (Texas Tech University)

**3. Cannabis Use and Participation in Mindfulness-Based Relapse Prevention among Adults with Alcohol Use Disorder**

Jake Hanes (University of New Mexico), Jenae Lynch (University of New Mexico), Victoria Votaw (University of New Mexico), Elena Stein (University of New Mexico), Anthony J. O'Sickey (University of New Mexico), Katie Witkietwitz (University of New Mexico)

**4. Preventing Adolescent Marijuana Use with a Family-Centered Behavioral Health Intervention: A 12-month Follow-up Study**

Holly B. Waldron (Oregon Research Institute), Michael S. Robbins (Oregon Research Institute), Timothy Ozechowski (Oregon Research Institute), Hyman Hops (Oregon Research Institute), Charles W. Turner (Oregon Research Institute), Janet Brody (Oregon Research Institute)

**5. Changes in Patterns of Cannabis Use among Drivers While on an Alcohol Ignition Interlock Program**

Michael Scherer (Pacific Institute for Research and Evaluation), Eduardo Romano (Pacific Institute for Research and Evaluation), Robert B. Voas (Pacific Institute for Research and Evaluation), Eileen Taylor (Pacific Institute for Research and Evaluation), Amy R. Manning (University at Buffalo The State University of New York, and Pacific Institute for Research and Evaluation), Thomas H. Nochajski (University at Buffalo The State University of New York), Carol F. Scott (University at Buffalo The State University of New York), Paul Marques (Pacific Institute for Research and Evaluation)

**6. Classes of Marijuana and Other Drug Users as Predictors of Alcohol Use and Crash Involvement**

Michael Scherer (Pacific Institute for Research and Evaluation), Eduardo Romano (Pacific Institute for Research and Evaluation), Eileen Taylor (Pacific Institute for Research and Evaluation), Robert B. Voas (Pacific Institute for Research and Evaluation)

**7. A Survey Study of the Health Impact of Cannabinoid Use among Patients with Autism Spectrum Disorders**

John Matuszewski (Realm of Caring Foundation), Joel Munson (Realm of Caring Foundation), Heather Jackson (Realm of Caring Foundation), Nicolas J. Schlienz (Johns Hopkins University School of Medicine), Marcel O. Bonn-Miller (University of Pennsylvania Perelman School of Medicine, Zynerva Pharmaceuticals), Natalie A. Lembeck (Johns Hopkins University School of Medicine), Ryan Vandrey (Johns Hopkins University School of Medicine)

**8. Marijuana Attitudes among Substance Use Clinicians**

Jared Wildberger (Towson University), Elizabeth C. Katz (Towson University)

**9. Differences between College Student Medical and Recreational Cannabis Users: More Similarities or More Differences?**

Mariah D. Sandoval (University of New Mexico), Adrian J. Bravo (University of New Mexico), Matthew R. Pearson (University of New Mexico), Marijuana Outcomes Study Team, Protective Strategies Study Team

**10. Reduction of Benzodiazepine Use in Patients Prescribed Medical Marijuana**

Chad Purcell (Dalhousie University), Nico Moolman (Dalhousie University), Andrew Davis (Acadia University), S. Mark Taylor (Dalhousie University)

**11. Development of an mHealth Diary that Examines the Effects of Cannabis Use on Chronic Neuropathic Pain in Individuals Living with HIV**

Brook Henry (University of California, San Diego), Sarah Henry (University of California, San Diego), Elizabeth Quintana (University of California, San Diego), David Moore (University of California, San Diego)

**12. Retail Availability of Cannabis in Oregon Counties, Perceived Availability of Cannabis, and Cannabis Use Among Adolescents**

Mallie J. Paschall (Prevention Research Center, Pacific Institute for Research and Evaluation), Joel W. Grube (Prevention Research Center, Pacific Institute for Research and Evaluation)

**13. Problems Associated with Adolescents' and Young Adults' Marijuana and Alcohol Co-Use**

Joel W. Grube (Prevention Research Center, Pacific Institute for Research and Evaluation), Sharon Lipperman-Kreda (Prevention Research Center, Pacific Institute for Research and Evaluation)

**14. Patterns of Co-Occurring Modes of Marijuana Use Among Colorado High School Students in 2017**

Kristin E Schneider (Department of Mental Health, Johns Hopkins Bloomberg School of Public Health), Kayla N Tormohlen (Department of Mental Health, Johns Hopkins Bloomberg School of Public Health), Ashley Brooks-Russell (Department of Community and Behavioral Health, Colorado School of Public Health, University of Colorado Anschutz Medical Campus), Renee M Johnson (Department of Mental Health, Johns Hopkins Bloomberg School of Public Health)

**15. Changes in Prevalence of Modes of Marijuana Consumption among Colorado High School Students from 2015 to 2017**

Kayla N. Tormohlen (Johns Hopkins Bloomberg School of Public Health), Kristin E. Schneider (Johns Hopkins Bloomberg School of Public Health), Renee M. Johnson (Johns Hopkins Bloomberg School of Public Health), Ashley Brooks-Russell (Colorado School of Public Health)

**16. Association between Coping Strategies and Marijuana Use Among Pre-Clinical Trauma-Exposed Students**

Angeles Astorga (University of North Texas), Nathan Kearns (University of North Texas), Rachel Armour (University of North Texas), Renee Cloutier (University of North Texas), Heidemarie Blumenthal (University of North Texas)

**17. Impact of Acute Cannabis Administration on the Endocannabinoid System may be Influenced by Body Mass Index**

Sophie L. YorkWilliams (University of Colorado Boulder), Raeghan L. Mueller (University of Colorado Boulder), Timothy B. Helmuth (University of Colorado Boulder), Kent E. Hutchison (University of Colorado Boulder), Angela D. Bryan (University of Colorado Boulder), L. Cinnamon Bidwell (University of Colorado Boulder)

**18. Acute Effects of Concentrated Cannabis on Motor Control and Timing: Smartphone-Based Mobile Assessment**

Leah N. Hitchcock (University of Colorado-Boulder), Patrick G. Monaghan (Colorado State University), Sophie L. YorkWilliams (University of Colorado-Boulder), Taylor L. Armstrong (University of Colorado-Boulder), Suzanne Taborsky-Barba (University of Colorado-Boulder), Angela D. Bryan (University of Colorado-Boulder), Kent E. Hutchison (University of Colorado-Boulder), Brian L. Tracy (Colorado State University), L. Cinnamon Bidwell (University of Colorado-Boulder)

**19. Endorsing Beliefs for Using Cannabis Around Exercise: An Exploratory Study**

Alicia Stewart (Washington State University Vancouver), Renee E. Magnan (Washington State University Vancouver and Washington State University), Benjamin O. Ladd (Washington State University Vancouver and Washington State University)

**20. Prevalence Rates of Marijuana, Alcohol, and Simultaneous Use and Associations with Alcohol-Related Consequences in At-Risk Youth**

Daniel J Delaney (University of Rhode Island), Sara G. Balestrieri (University of Rhode Island), Shayna S. Bassett (University of Rhode Island), L.A.R Stein (University of Rhode Island)

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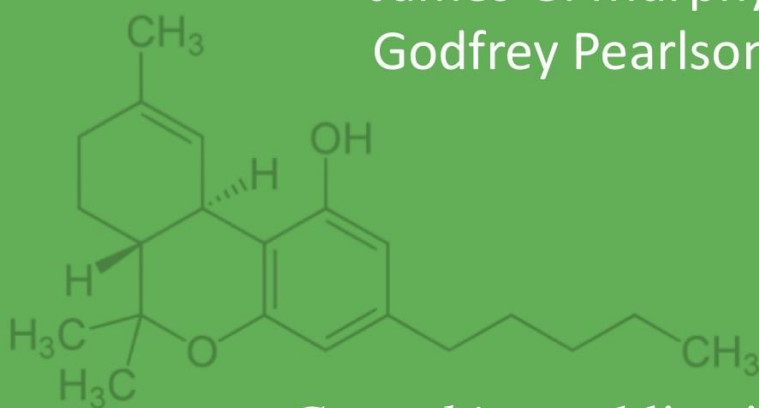
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