

SATURDAY, JUNE 17, 2023

1:00 P.M. - 2:30 P.M.

WORKSHOP: STRESSFUL ENVIRONMENTS AND GENETIC RISK FACTORS ASSOCIATED WITH EARLY INITIATION OF ALCOHOL AND SUBSTANCE USE: FINDINGS FROM THE ABCD STUDY

Plaza Ballroom A

Chair: *Priscila Gonçalves, Columbia University*

Co-Chair: *Rick Cruz, Arizona State University*

Early initiation of alcohol or other substance use can disrupt brain development contributing to negative individual and societal consequences. Stressful environments, including adverse childhood experiences, and high family conflict, coupled with less effective parenting, play an outsized role in the risk for early substance use initiation. This constellation of environmental influences interacts with genetics and behavioral (e.g., decision-making related to delayed reward) factors to transmit risk for early substance use. Better understanding the ecodevelopmental pathways of early substance use risk can inform prevention efforts, which could have powerful downstream effects. This session describes novel research examining biological and environmental factors related to the prediction of early alcohol and other substance use in the large, longitudinal Adolescent Brain Cognitive Development (ABCD) Study®. The symposium is comprised of scholars from the NIDA-funded START program for URM investigators, which aims to enhance diversity among the network of scholars working with ABCD data. First, Skye Bristol will describe family conflict predictors of different alcohol expectancies. Next, Dr. Bounds will explore the combined impact of family conflict and adverse childhood experiences on future alcohol use and related risk behaviors. Dr. Ryan-Pettes will expand beyond parental monitoring and discipline by examining these influences in the context of peer affiliation, neighborhood, and environmental factors. This symposium on risk factors for early substance use will be concluded by Dr. Garcia who extends beyond environmental factors with a focus on the contribution of genetic risk factors and reward-related decision-making to alcohol and substance use risk in early adolescence.

1.1 Family Conflict as a Risk Factor for Problematic Alcohol Expectancy in the ABCD Study

Speaker: *Skye Bristol, University of South Florida*

1.2 Exploring the Impact of Family Conflict and Adversity on Alcohol Use and Risk Behaviors in Youth in the ABCD Study

Speaker: *Dawn Bounds, University of California, Irvine*

1.3 Effects of Parent Monitoring and Inconsistent Discipline on Risk for Alcohol Initiation Through Deviant Peer Affiliation in the Context of Neighborhood Variables

Speaker: *Stacy Ryan-Pettes, Baylor University*

1.4 Innate and Environmental Determinants of Delayed Reward Discounting in Youth Participants in the ABCD Study

Speaker: *Erik Garcia, University of Nebraska Omaha*

Moderator: *Neo Gebru, Brown University*

1:00 P.M. - 2:30 P.M.

WORKSHOP: EVALUATING PENNSYLVANIA'S CENTERS OF EXCELLENCE ON IMPROVING OUD TREATMENT ACCESS & PATIENT CARE

Plaza Ballroom D

Chair: *Renee Cloutier, University of Pittsburgh*

Co-Chair: *Janice Pringle, University of Pittsburgh*

States have developed several responses to address the growing US opioid public health crisis. In 2016, Pennsylvania Governor Tom Wolf introduced the Centers of Excellence to increase access to evidence-

based treatment services for OUD, including medications for OUD (MOUD) and care management. Amidst early program successes and planned expansions from 45 pilot treatment sites in 2020, the COVID-19 pandemic incited disruptions to healthcare services and increased overdoses. This Mini-Symposia will present the COE history and empirical results demonstrating: 1) effects of COE care management services on improving patient outcomes, 2) how COVID-19 impacted MOUD service delivery, and 3) lessons learned for future expansion.

Methods and Results:

Symposia 1: A mixed-effects Cox model with n=15,100 patients nested within n=41 treatment sites indicated an overall median retention rate of 19.4 weeks. Retention rates improved with more patients care management services and declined as sites client caseload ratios increased.

Symposia 2: Correlations between staff-administered organizational health survey scales demonstrated that organizations with greater organizational health pivoted faster ($\rho = -0.360$, $p < 0.001$) to COVID-19 disruptions/policy changes while maintaining higher workplace morale ($r = 0.466$, $p = .002$).

Symposia 3: Qualitative interviews with COE program staff indicated COVID-19 impacts on the processes associated with MOUD implementation, care coordination, and client confidentiality. According to participants, some policy and regulatory changes/adaptations have the potential to improve patient-level MOUD-related outcomes (e.g., telehealth, take home dosing) while others did not (e.g., urine drug screening frequency).

Conclusion: Future research and policy should consider addressing organizational health to improve OUD patient-level outcomes.

2.1 The Effects of Care Management and Provider Capacity on Opioid Use Disorder Treatment Retention
Speaker: *Renee Cloutier, University of Pittsburgh*

2.2 The Relationship Between Organizational Health and Resiliency Among Pennsylvania's Centers of Excellence During the COVID-19 Pandemic
Speaker: *Debra Moore, University of Pittsburgh*

2.3 Response to Impact of COVID-19 on Medications for Opioid Use Disorder Service Delivery at Centers of Excellence in Pennsylvania
Speaker: *Rahul Amruthapuri, University of Pittsburgh, School of Pharmacy Program Evaluation and Research Unit (PERU)*

1:00 P.M. - 2:30 P.M.

WORKSHOP: SHARING YOUR SCIENTIFIC STORY: TIPS AND TRICKS FOR STRATEGICALLY AND EFFECTIVELY COMMUNICATING YOUR RESEARCH
Grand Ballroom I

Chair: *Rachel Evans, DHHS/NIH/NIDA*

Sharing your scientific story: tips and tricks for strategically and effectively communicating your research. “Science is not finished until it’s communicated.” – Sir Mark Walport, former UK Chief scientist
The ability to effectively communicate scientific concepts and research findings to a wide range of audiences is a crucial part of the scientific process. And in a world where misinformation continues to permeate scientific discussions, and trust in science and scientists is declining across many groups, the need to deliver the right message, to the right audience, at the right time, in the right way, has never been more important. In this forum, the speakers will share strategies to help scientists move beyond communicating their findings in academic journals to reach the general public. They will discuss how to work with their research funders and the media to get attention for their scientific findings, and how to structure strong messages that will resonate with the audiences they aim to reach. The speakers will also host a robust Q and A session to answer questions from the audience.

3.1 Sharing Your Scientific Story: Tips and Tricks for Strategically and Effectively Communicating Your Research
Speaker: *Magdalena Cerdá, New York University School of Medicine*

3.2 Sharing Your Scientific Story: Tips and Tricks for Strategically and Effectively Communicating Your Research

Speaker: *Jennifer Hobin, National Institute on Drug Abuse*

3.3 Sharing Your Scientific Story: Tips and Tricks for Strategically and Effectively Communicating Your Research

Speaker: *Carla Johnson, The Associated Press*

1:00 P.M. - 2:30 P.M.

WORKSHOP: PATHWAYS TO RECOVERY AND BEYOND IN NATIVE AMERICAN COMMUNITIES

Governor's Square 15

Chair: *Anne Skinstad, University of Iowa*

Recovery from substance use disorders (SUD) is a multi-dimensional phenomenon, and over the last two decades multiple definitions with varying overlap have been proposed. Research has also found that recovery definitions vary across social groups, including by race/ethnicity; however, scant research has focused on the ways that Native American individuals define recovery. Thus, current consensus definitions may have limited salience for Native American communities, may result in less efficacious interventions, and may partially explain persistent treatment disparities. To address the gap, this workshop intends to spur development of a culturally appropriate definition of recovery. First, Dr. Paul Gilbert will review findings from a current national US study of people in recovery, highlighting commonalities and differences across key dimensions of gender, race/ethnicity, and treatment exposure. Second, Dr. Anne Helene Skinstad and Steve Steine, MA, will introduce a translation of recovery definition into tribal and urban Indian community contexts, and summarize how results from the Virtual Native Talking Circles (VNTC), a workforce development program, contributed to a better cultural understanding of the recovery process. Furthermore, VNTC results underscored the importance of peer support and networking, as well as providing additional culturally informed tools, and self-care measures to better prepare providers to support clients' recovery in a culturally informed way. Non-AIAN VNTC participants reported improved cultural understanding and capacity to support their tribal clients with SUD or in recovery. Finally, Dr. Daniel V. Foster will lead a discussion with speakers and audience members on recovery meanings and pathways in an Indigenous cultural context.

4.1 What Does Recovery Mean? Ubiquitous and Unique Elements From a National U.S. Survey of Adults in Recovery

Speaker: *Paul Gilbert, University of Iowa*

4.2 Behavioral Health Benefits of Virtual Native American Talking Circles

Speaker: *Steven Steine, ATTC/ College of Public Health/ University of Iowa*

Discussant: *Daniel Foster, Included Health*

1:00 P.M. - 2:30 P.M.

WORKSHOP: A VIEW BEYOND THE HORIZON: INNOVATIVE METHODOLOGIES AND APPROACHES IN SUBSTANCE USE DISORDER RESEARCH AND TREATMENT UTILIZED INTERNATIONALLY

Grand Ballroom II

Chair: *Laura Brandt, City College of New York*

While substance use disorders (SUD) pose a challenge to public health worldwide, context-specific aspects of these challenges require context-specific solutions. Therefore, unique innovations are brought about by unique regional or local challenges. At the same time, owing to political and regulatory barriers, these innovations may not be available in other settings/countries. This workshop, hosted by CPDD's International Committee, brings together researchers with diverse cultural and professional backgrounds

with the aim to enrich our shared understanding of SUD-related issues and address inadequacies in the implementation of existing evidence-based approaches into practice.

Towards the goal of providing insight into methodological and treatment innovations from international contexts, this workshop will be structured in two parts. Part 1 will consist of 15-minute panel presentations: (1) Eugenia Oviedo-Joekes will present scientific evidence from Canada on injectable opioid agonist treatment, and injectable hydromorphone in particular, as a promising treatment option for severe opioid use disorder; (2) Thiago Fidalgo will discuss challenges related to collecting epidemiological data in low- and middle-income countries and lessons learned from conducting a longitudinal field survey in Brazil; (3) Min Zhao will describe digital medicine approaches and a Community-based Addiction Rehabilitation Electronic System as alternative/complementary care models in China, in the context of limited mental health resources; and (4) Suzanne Nielsen will discuss a collaborative prescriber-pharmacist model of care in Australia as a low-threshold approach to improve access to SUD treatment. Part 2 will be an interactive discussion, and we particularly encourage international attendees to share their diverse experiences and regional innovations.

5.1 “Injectable Opioid Agonist Treatment – Implementing Evidence-Based Approaches into Practice for Opioid Use Disorder in Canada”

Speaker: *Eugenia Oviedo-Joekes, School of Population and Public Health, University of British Columbia*

5.2 Challenges Related to Conducting Epidemiological Surveys in Low- And Middle-Income countries: Lessons Learned from Field Work in Brazil

Speaker: *Thiago Fidalgo, Universidade Federal de Sao Paulo*

5.3 Early learnings from a hybrid implementation-effectiveness study of pharmacist-prescriber collaborative care for opioid dependence, and other clinical innovations in Australia

Speaker: *Suzanne Nielsen, Monash University*

3:00 P.M. - 4:30 P.M.

WORKSHOP: NEW APPROACHES TO CULTURALLY APPROPRIATE TREATMENT AND RESEARCH

Grand Ballroom I

Chair: *A. Kathleen Burlew, University of Cincinnati*

New Approaches to Culturally Appropriate Treatment and Research. A compelling body of research suggests that generic treatments may not adequately address risk, protective, and contextual factors related to substance use treatment among specific racial/ethnic minoritized (REMs) groups. Moreover, novel approaches may be required to promote REM recruitment and retention into research. The mission of the Minority Interest Group (MIG) of NIDA’s National Drug Abuse Treatment Clinical Trials Network is to promote research that advances the science of REM substance use. Consistent with that mission, MIG members will present novel strategies for recruiting, retaining, and treating REMs.

Aims: 1) To share culturally-appropriate approaches for engaging/ retaining REMs in substance use research. 2) To describe treatment approaches that incorporate syndemic factors related to the etiology and treatment of substance use among REMs

Both Drs. Obel and Cain will share efforts to increase the recruitment and retention of REMs into substance use research. Dr. Obel’s team has developed an evidence-based manual for recruiting and retaining REMs into research. Dr. Cain will describe her team’s use of community-engaged culturally appropriate strategies to recruit and retain urban REMs in substance use treatment research.

Both Drs. Moreland and Bryant will share culturally appropriate treatment research. Dr. Moreland will describe research identifying and addressing decision-making about buprenorphine among REMs. Utilizing the ADAPT-ITT framework, Dr Bryant will describe the adaptation of an intervention to more effectively respond to substance use and discrimination distress simultaneously.

Dr. Jordan, the discussant, will address the conclusions and implications for future research.

6.1 The Cultural Adaptation Process of a Substance Use Intervention for Black Justice-Involved Youth Using the Adapt-ITT Model (Phase 1): Lessons Learned

Speaker: *Brittany Bryant, Medical University of South Carolina*

6.2 Culturally Appropriate Approaches for Recruitment and Retention of African Americans in SUD Treatment:

Speaker: *Gloria Cain, Howard University College of Medicine*

6.3 Are Minority Patients With Opioid Use Disorder More Likely to Decline Buprenorphine in the ED? Exploring Reasons That People Accept and Decline Buprenorphine

Speaker: *Angela Moreland, Medical University of South Carolina*

6.4 Innovative Methods for Increasing Recruitment & Retention in Research (RCTs & Non-RCTs) among African American Communities in the United States (US).

Speaker: *Geoffrey Obel, University of Texas Southwestern Medical Center At Dallas*

Discussant: *Caravella McCuistian, Department of Psychiatry and Behavioral Sciences, School of Medicine, University of California San Francisco*

3:00 P.M. - 4:30 P.M.

**WORKSHOP: STANDARDS OF PSYCHEDELIC CARE: PEER & PROFESSIONAL PROVIDERS
Plaza Ballroom A**

Chair: *Brian Anderson, University of California, San Francisco*

Co-Chair: *Jennifer Mitchell, University of California San Francisco*

As the use of psychedelics like psilocybin, MDMA, and ayahuasca becomes more prevalent across the US due to the advancement of clinical drug development and drug policy reforms (e.g., decriminalization and legalization), providers of psychedelics and psychedelic-informed care have been developing standards of good practices with these substances. This includes providers from peer-based (12 step recovery fellowships), professional/therapeutic, and religious settings. Three national organizations that have generated standards of care for the safe use of psychedelics in their respective settings present information on their organizations, their processes of generating these standards, and comments specifically on what their memberships have learned about the apparent risks and benefits of using psychedelics as part of the care of persons suffering from addictions.

7.1 Psychedelics in Recovery: Mutual Aid for Psychedelic Integration

Speaker: *Kevin Franciotti, Kevin Franciotti Counseling*

7.2 Developing Standards of Practice Within the American Psychedelic Practitioners Association Part 2

Speaker: *Stephen Xenakis, American Psychedelic Practitioners Association (APPA)*

Discussant: *Peter Hendricks, The University of Alabama At Birmingham*

3:00 P.M. - 4:30 P.M.

**WORKSHOP: EPIDEMIOLOGY AND PUBLIC HEALTH RESEARCH METHODS
Grand Ballroom II**

Chair: *Howard Chilcoat, Indivior, Inc.*

Co-Chair: *Maria Parker, Indiana University - Bloomington*

This proposal is for a continuation of the annual CPDD Epidemiology and Public Health Research Methods evening workshop series that was launched nearly 20 years ago. This year's workshop will focus on geospatial analytical approaches of interest to those conducting epidemiologic, prevention, and clinical research in the field of substance use and related disorders. Topics to be discussed include: 1) Jamie Humphrey, RTI - Spatial heterogeneity in county-level racial residential segregation and overdose mortality rates of opioids, synthetic opioids, and psychostimulants with abuse potential. Using multiscale geographically weighted regression models, spatially-explicit measures of racial residential segregation, and smoothed overdose mortality rates, this presentation will explore the presence and scale of spatial

heterogeneity in the relationship between structural racism and three overdose mortality rates in US counties, 2020: any opioids, synthetic opioids, and psychostimulants with abuse potential. 2) Richard Sadler, Michigan State University - Geospatially-Informed Strategies to Address Mental Health and Substance Use Disparities in Flint, Michigan. This talk will explore the creation of a community-informed GIS-based healthfulness index and the use of standard hot spot analyses to understand and act upon geographic disparities uncovered in the Strengthening Flint Families (SFF) and the Resiliency in Communities After Stress and Trauma (ReCAST) programs. 3) Erik Nelson, Brigham Young University - Placing drug use into context. This presentation will discuss the impact of social and environmental conditions that promote (impede) drug use. It will also explore methods for measuring and analyzing these factors using geospatial techniques.

8.1 Spatial Heterogeneity in County-Level Racial Residential Segregation and Overdose Mortality Rates of Opioids, Synthetic Opioids, and Psychostimulants With Abuse Potential, 2020

Speaker: *Jamie Humphrey, RTI International*

8.2 Geospatially-Informed Strategies to Address Mental Health and Substance Use Disparities in Flint, Michigan

Speaker: *Richard Sadler, Michigan State University College of Human Medicine*

8.3 Placing Drug Use Into Context

Speaker: *Erik Nelson, Brigham Young University*

3:00 P.M. - 4:30 P.M.

WORKSHOP: COLLABORATION AND COMPLICATION: LESSONS LEARNED IN IMPLEMENTING COMMUNITY-ENGAGED RESEARCH ON SUBSTANCE USE

Plaza Ballroom D

Chair: *Devin Banks, University of Missouri--St. Louis*

Advocates, policy makers, patients, and recently, NIDA have called for the inclusion of people with lived experience in the conceptualization and realization of addiction science. Perhaps more than ever, research teams are including patient and community consultants and advisory boards in their research.

However, most research training paradigms do not prepare investigators to effectively collaborate with people with lived experience. This is especially true when working with communities who experience other intersecting forms of stigma, such as racial stigma, who have often been considered “hard to reach” populations.

This symposium will share lessons learned from community-engaged NIH- and foundation-funded research projects with specific focus on minoritized people with lived experience. Presenters will demonstrate how their research designs, data collection, and interpretation of qualitative and quantitative findings developed based on the feedback of people with lived experience with substance use (disorder).

Attendees will increase their knowledge of different approaches to community-engaged research and strategies for addressing common challenges that emerge when collaborating with stakeholders outside the academy. This knowledge will support investigators in not only engaging with minoritized people with lived experience, but developing long-term, bidirectional relationships.

Specifically, presentations will include practical strategies for: 1) building trusted partnerships and developing a Community Advisory Board in communities that have been previously exploited by research and/or policy; 2) recruiting, engaging, and retaining minoritized research participants; 3) developing effective, culturally-appropriate recovery interventions and education; and 4) incorporating insights of community members into data interpretation and clinical and policy recommendations.

9.1 We see the Value in the Hood: Developing Reciprocal Research Partnerships in an Exploited Community

Speaker: *Maria Paschke, University of Missouri - St. Louis*

9.2 Blind Spots in Ivory Towers: Considerations for Recruiting Black American Research Participants

Speaker: *Danelle Stevens-Watkins, University of Kentucky*

9.3 The Role of Cultural Humility in Community-Engaged Research
Speaker: Alexandria Bauer, Rutgers University

9.4 From Relapse Prevention to Recovery Planning: Community-Based Participatory Research to Address Substance Use on a Rural American Indian Reservation
Speaker: Monica Skewes, Montana State University

Moderator: Devin Banks, University of Missouri--St. Louis

3:00 P.M. - 4:30 P.M.

WORKSHOP: R/ASKACADEMIA: SPECIAL CONSIDERATIONS IN THE PRACTICE OF USING REDDIT FOR SUBSTANCE USE RESEARCH
Governor's Square 15

Chair: Savannah Brenneke, Johns Hopkins Bloomberg School of Public Health
Co-Chair: Meredith Meacham, University of California San Francisco

Interest in the use of social media platforms for substance use research has been on the rise, with Reddit emerging as one of the most rapidly growing platforms studied. To date, however, standards for the practice of collecting, analyzing, and disseminating findings from these highly unstructured data are lacking, contributing to concerns around the validity and ethics of using such data in the field. Therefore, there is a need for researchers across the fields of health and social sciences, computer science and engineering, to share lessons learned and work towards establishing best practices. This symposium will focus on phases of the research process using Reddit data, moving from defining Reddit data and conceptualizing research questions, to data collection and management, analysis and inference, and ending at dissemination. Speakers will present their original research, with special attention to a phase of the research process and challenges they face. Dr. Amanda Bunting will discuss the nature of Reddit data and the conceptualization of research questions that can be asked within the data. Ms. Alexandra DeLucia will present on the use of Natural Language Processing (NLP) for the extraction of data from Reddit, providing the perspective of computer science in the application of computational methods for data harvesting and management. Ms. Savannah Brenneke's work will explore analytical approaches commonly found in the literature, including inferences drawn from them. Lastly, Dr. Nicholas Proferes will cover the ethical considerations in the decision to use Reddit for research and their implications for the dissemination of findings.

10.1 Rapid Use of Reddit to Understand Emerging Drug Use Trends
Speaker: Amanda Bunting, New York University School of Medicine

10.2 r/AskAComputerScientist: Processing Reddit Data for the Social Sciences
Speaker: Alexandra DeLucia, Johns Hopkins University

10.3 Harnessing Reddit: The Methods and Their Limitations in Analyzing Unstructured Data From Social Media
Speaker: Savannah Brenneke, Johns Hopkins Bloomberg School of Public Health

10.4 Ethical Responsibility and Reddit Research: How Contextual Integrity Can Help Guide Practice
Speaker: Nicholas Proferes, Arizona State University

SUNDAY, JUNE 18, 2023

10:15 A.M. - 11:15 A.M.

MINI-SYMPOSIUM: HARM REDUCTION UTILIZATION AND STRATEGIES
Grand Ballroom II

Chair: Mai Pho, The University of Chicago
Co-Chair: Judith Tsui, Department of Medicine, Division of General Internal Medicine, University of Washington

Rural areas experience high rates of drug overdose. While recent surges in overdose deaths are driven largely by highly potent fentanyl and related analogues, the rural opioid crisis is co-occurring and intertwined with evolving methamphetamine use. Overdose deaths involving methamphetamines increased by over 600% between 2007 and 2017. Harm reduction services (HRS) play a vital role in risk reduction and health promotion among rural PWUD by both figuratively and literally meeting individuals where they are in the communities and settings where they live and use drugs. Strategies include sterile equipment, overdose education and naloxone distribution (OEND), product testing for fentanyl, HIV, hepatitis C, and STI screening, sexual health supplies, linkage to substance use disorder treatment and social support. Given limited substance use disorder treatment in rural areas, efforts to improve health outcomes for people who use drugs in these settings hinge on harm reduction strategies. However, the availability of HRS is limited in rural settings compared to urban areas due to funding, marginalization, and vulnerabilities exacerbated by the COVID-19 pandemic and related mitigation strategies. This mini-symposium will explore factors associated with harm reduction practices, including naloxone use and fentanyl product testing from data collected through the Rural Opioid Initiative (ROI), a research consortium funded by NIDA, CDC, SAMHSA, and the Appalachian Regional Commission, as well as present strategies for expanding access and engagement with harm reduction services in rural settings.

11.1 Factors Associated With Possession of Naloxone Among Rural People Who Use Drugs

Speaker: *Alex Rains, University of Chicago, Pritzker School of Medicine*

11.2 Fentanyl Awareness and Harm Reduction Techniques to Avoid Fatal Overdose: A Qualitative Exploration of Eight Rural Settings in the United States

Speaker: *Rebecca Bolinski, Southern Illinois University School of Medicine*

11.3 Engagement in Harm Reduction Services through Academic and Community-Based Partnership

Speaker: *Mai Pho, The University of Chicago*

11:30 A.M. - 12:30 P.M.

MINI-SYMPOSIUM: 2022 NIDA CRAVING CHALLENGE

Plaza Ballroom BCEF (Plenary)

Chair: *G. Andrew James, University of Arkansas for Medical Sciences*

Co-Chair: *Ronald Thompson, University of Arkansas for Medical Sciences*

The National Institute on Drug Abuse (NIDA) issued the “Product Prototypes to Combat Drug Craving” Challenge, which solicited working prototypes of devices intended to reduce drug craving among people with substance use disorders. The Challenge specifically sought prototypes that were easily accessible, minimally invasive, available on-demand, did not require detoxification, could be adapted for different substances, modifiable to provide tailored experiences, and suitable for patients of diverse backgrounds and different stages of recovery. This mini-symposium will discuss the inspiration behind some of the winning entries.

Richard Hanbury MBA (Healthcare) will discuss the winning entry Sana, a neuromodulation platform that provides anxiety relief on-demand and has shown a 45% reduction in anxiety during methadone withdrawal. Josh Israel (Serial Entrepreneur) will discuss the runner-up entry Hale, a vaporizer system to ease nicotine craving and withdrawal by automatically reducing nicotine use over time. Ronald G. Thompson Jr., Ph.D., will discuss the Honorable Mention entry for smartphone app OptiMAT, which seeks to reduce opioid misuse through daily monitoring of mood and craving, personalized feedback, and GPS-driven “just-in-time” intervention when participants enter areas of high contextual risk for relapse. Chair Andrew James, Ph.D., a co-creator of OptiMAT, will lead discussion on the devices’ common and unique approaches for reducing drug craving.

12.1 The Sana Wearable Neuromodulation Device for Reducing Anxiety and Drug Cravings

Speaker: *Richard Hanbury, Sana Health, Inc.*

12.2 Hale: Automated Nicotine Reduction Device

Speaker: *Josh Israel, Hava Health, Inc.*

12.3 OptiMAT: A Smartphone Application to Decrease Opioid Cravings and Optimize MAT for Opioid Use Disorders

Speaker: *Ronald Thompson, University of Arkansas for Medical Sciences*

2:15 P.M. - 3:45 P.M.

WORKSHOP: "PRE-ADDICTION:" A STARTING POINT FOR A STRATEGIC SHIFT TOWARD EARLIER INTERVENTION IN SUBSTANCE USE DISORDERS

Plaza Ballroom BCEF (Plenary)

Chair: *Nora Volkow, National Institute on Drug Abuse*

Co-Chair: *George Koob, National Institute on Alcohol Abuse and Alcoholism*

Discussant: *A Thomas McLellan, University of Pennsylvania Perelman School of Medicine*

Federal efforts to address substance use disorders (SUDs) have focused almost exclusively on those with serious, chronic addictions. Yet treatment penetration rates and treatment outcomes have been disappointing. The far larger population of those who regularly misuse substances and often transition to serious SUDs has been largely ignored. Facing a similar situation, the diabetes field strategically moved toward identifying and intervening with early-stage diabetes - termed "pre-diabetes." That strategic change led to better prevention, longer delay in onset of serious diabetes, better treatment penetration and more effective reimbursement policies. This workshop first describes (15 minutes) how the diabetes field developed this strategy, including a commonly understood name to motivate both patients and clinicians, and creation of evidence-based medications and behavioral interventions. Finally, we offer our suggestion of the term "pre-addiction," initially defined by 2-5 DSM 5 diagnostic criteria as a starting point for the development of this concept for SUDs. The remainder of the workshop will be devoted to audience discussion and suggestions on five important and unresolved issues (12 minutes each) if this concept is to move forward.

1. What promising biological measures may improve the suggested operational definition of pre-addiction?
2. What medications might be appropriate for those with pre-addiction?
3. What behavioral interventions – including social media or internet apps - might be effective with pre-addiction?
4. How can insurers and healthcare systems facilitate studies of effectiveness and value pre-addiction interventions?
5. Are there concerns that the term pre-addiction will promote stigma?

4:00 P.M. - 5:15 P.M.

MEDIA FORUM

Grand Ballroom I

Chair: *Bethea Kleykamp, BAK and Associates*

Mainstream news media disseminates many problematic narratives about drug use and addiction that perpetuate stigma, discrimination, and bad policy. One way to address these shortcomings is to increase the coverage of evidence-based approaches to addiction treatment and recovery, including well-designed research studies, through collaborative efforts with subject matter experts. Unfortunately, many experts are not trained to interact with journalists or the general public about addiction science. This forum is designed to offer customized, in-person training that can help attendees develop effective science communication skills.

The Media Forum will be open to all attendees including graduate-level and early-career CPDD attendees for whom this forum could serve as a valuable career development experience. The 120-minute forum will be broken down into three components: 1) an overview of different types of science and medical writing related to substance use research and treatment (Presenter: Kleykamp; 30min); 2) tips on science communication (Presenter: Jonathan 30min) 3) tips on working with the media to communicate science (Presenter: Ashton; 30minutes); 4) trainer led small-group didactic and practice sessions (30min). The small-group trainer sessions will help attendees become aware of non-traditional avenues of disseminating their research and expertise (science journalism, regulatory writing, clinical guidelines, educational materials),

sharing research accurately and concisely with the media, how to disseminate press releases, and how to pitch ideas or op-eds.

14.1 Reporting on Addiction: Science Communication

Speaker: *Jonathan Stoltman, Opioid Policy Institute*

14.2 Communicating Science Effectively Media Forum: Training With Reporting on Addiction

Speaker: *Ashton Marra, Reporting on Addiction*

4:00 P.M. - 5:30 P.M.

POLICY FORUM

Grand Ballroom II

Chair: *Sandra Comer, Columbia University and NYSPI*

Despite a longstanding prohibition on psychedelics dating back to the 1970s, scientific and public interest in these substances is growing as clinical trials suggest their promise for treating mood, anxiety, and substance use disorders. Early reports that people with severe treatment-resistant depression responded to psychedelic treatment created momentum for controlled clinical trials to establish therapeutic efficacy for other indications. The Food and Drug Administration (FDA) has granted breakthrough therapy status for psilocybin and MDMA, which means that intensive FDA guidance is provided for designing the clinical trial programs and expedited timelines are applied when FDA reviews the safety and efficacy data from the completed Phase III studies.

This Forum will present the history of the therapeutic use of hallucinogens (Jack Henningfield), the epidemiology of the current illicit use of hallucinogens (Deborah Hasin), and current regulatory perspectives on psychedelic drug development from the FDA (Marta Sokolwska) and Industry (Beatriz Rocha).

15.1 The History of Therapeutic Use: Lessons Learned From 1960s Studies, and From the Renaissance in Clinical Development Beginning in the First Decade of the 21st Century

Speaker: *Jack Henningfield, Pinney Associates, Inc.*

15.2 The Epidemiology of Hallucinogen/Psychedelic Use in the United States

Speaker: *Deborah Hasin, Columbia University*

15.3 Analyses of U.S. Trends in Non-Medical Use of Hallucinogens

Speaker: *Beatriz Rocha, Fortrea*

15.4 MDMA for PTSD and Psilocybin for Treatment-Resistant Depression Currently in Phase III Trials

Speaker: *Marta Sokolowska, FDA*

MONDAY, JUNE 19, 2023

9:00 A.M. - 10:00 A.M.

MINI-SYMPOSIUM: BEYOND THE DICHOTOMY

Grand Ballroom I

Chair: *Cara Struble, Geisel School of Medicine at Dartmouth*

Co-Chair: *Jessica Barrington-Trimis, University of Southern California*

Cannabis use and cannabis-related problems remain highly prevalent among adolescents and young adults (AYA). Burgeoning research reveals substantial disparities in problematic cannabis use between LGBTN+ (lesbian, gay, bisexual, transgender, non-binary+) AYA and their cisgender, heterosexual counterparts. However, this research has been limited by a lack of adequate sampling, leading studies to combine individuals from any LGBTN+ subgroup into a single analytic group and obfuscating heterogeneity in cannabis use behaviors across the diverse range of identities utilized by AYA. This mini-symposium will highlight the need for scientists to expand analyses to explore differences within the LGBTN+ population by

describing heterogeneity observed in cannabis use behaviors across subgroups. Talks will examine key individual, interpersonal, and structural mechanisms that may explain observed disparities within and outside the LGBTN+ population of AYA. The first speaker will present on distinct cannabis use patterns among subgroups of LGBTN+ youth from Southern California, and relatedly explore how outness (openness about one's identity) and discrimination experiences might explain disparities in use. The second speaker will examine differences in the effects of depression and anxiety on associations between minority stressors and cannabis problems across subgroups of LGBTN+ young adults. The third speaker will examine LGBTN+ subgroup differences in reported exposure to pro-cannabis marketing, and associations with LGBTN+ disparities in cannabis use. This collection of presentations on LGBTN+ disparities in cannabis use behaviors will highlight implications for future research, treatment, and policy, providing concrete suggestions for research strategies to better understand disparities in substance use behaviors for the LGBTN+ population.

16.1 Addressing the Role of Minority Stressors: A Cross-Sectional Analysis of Cannabis Use Patterns Among LGBTN+ High Schoolers

Speaker: *Tahsin Rahman, University of Southern California*

16.2 Comparing the Impact of Minority Stressors and Co-Occurring Mental Health Factors on Cannabis-Related Problems in a Diverse Sample of LGBTN+ Young Adults

Speaker: *Cara Struble, Geisel School of Medicine at Dartmouth*

16.3 Pro-Cannabis Marketing and LGBTQ+ Disparities in Cannabis Use Among Youth and Young Adults

Speaker: *Evan Krueger, Tulane University*

10:30 A.M. - 12:00 P.M.

SYMPOSIUM: MEASUREMENT OF CANNABIS CONSUMPTION TO DETERMINE RISK AND PROMOTE PUBLIC HEALTH

Plaza Ballroom A

Chair: *Alan Budney, Geisel School of Medicine at Dartmouth*

Co-Chair: *Ashley Linden-Carmichael, Penn State University*

With the escalation of cannabis legalization and commercialization, the need for better public messaging and guidelines about safe vs. risky use patterns has become imperative. Efforts to develop such guidelines are hindered by a lack of valid methods for measuring diverse cannabis products and quantifying consumption of the intoxicating component of cannabis, i.e., THC. This symposium will provide data from a diverse set of studies that help move the field towards resolution of this cannabis quantification impasse. The initial presentation will showcase methods utilized in the International Cannabis Policy Study for measuring novel cannabis product consumption quantities, generating national prevalence estimates, and evaluating consumer understanding of product labels. Next, a community-based study of frequent cannabis consumers that measured quantity, frequency, potency, and dose will demonstrate how those metrics can predict risk of problematic cannabis use. Findings from an intensive ecological momentary assessment study of young adults, will show how quantity reports and their interaction with product type and route of administration relate to subjective intoxication and other adverse consequences. Last, results from a study in which milligrams of THC consumption was calculated using responses from an internet-based survey of frequent cannabis consumers will describe associations between THC amount, pattern of use, and Cannabis Use Disorder severity. A moderated discussion will highlight how this work advances methods for measuring cannabis dose and determining its relationship to risk, and importantly, generate future innovative studies that will expedite the development of guidelines for safe and unsafe use of cannabis.

17.1 Consumption Patterns for Cannabis Products From a National Sample of Consumers in the United States: Edibles, Extracts, CBD, and Other 'Novel' Products

Speaker: *David Hammond, University of Waterloo*

17.2 Predicting Problematic Cannabis Use From Estimates of Cannabis Quantity, Frequency, Potency, and Standard Dose

Speaker: *Brad Conner, Colorado State University*

17.3 Measuring Cannabis Use, Subjective Experiences, and Cannabis-Related Consequences in the Moment: Associations by Cannabis Product, Route of Administration, and Other Substance Use
Speaker: Ashley Linden-Carmichael, Penn State University

17.4 Exploring the Link Between the Amount and Pattern of THC Consumption and CUD Severity in a Large Sample of Adults
Speaker: Jacob Borodovsky, Dartmouth Geisel School of Medicine

Moderator: Alan Budney, Geisel School of Medicine at Dartmouth

10:30 A.M. - 12:00 P.M.

**SYMPOSIUM: THE INTERSECTION OF AGING, TOBACCO USE, AND HEALTH EQUITY
Governor's Square 15**

Chair: *Bethea Kleykamp, BAK and Associates*

Significance: Over the last 20-plus years, combustible cigarette prevalence has dropped to the lowest levels ever recorded for young people in the United States but has not changed for older adults (65 years+). At the same time, novel tobacco products and policies continue to evolve, and the extent to which these shifts will impact older smokers is rarely addressed. For example, although electronic nicotine delivery systems (ENDS) are the fastest-growing tobacco product category, few research studies examine their harm reduction potential among older adults. Yet, these individuals stand to gain the most from stopping their combustible tobacco use as soon as possible. In addition, many people who smoke into later decades of life have been historically minoritized, including individuals who are Black and Hispanic, have a lower socioeconomic status, and/or have more chronic health issues. Thus, aging and tobacco use is a long-standing health equity issue that continues to be overlooked in research, treatment, and policy.

Specific Aims: The primary aim of this symposium is to educate and promote discussion about older adults that use tobacco and nicotine. Four presentations will address four different tobacco products/policy initiatives, including 1) very low nicotine content cigarettes, 2) electronic cigarettes, 3) menthol and non-menthol tobacco flavoring, and 4) lung cancer screening. Given the broad focus of this symposium, we expect that it will be of great interest to clinical researchers, healthcare providers, and health policy organizations that seek to learn about tobacco-related disparities among older adults.

18.1 A Qualitative Analysis of Older Adults' Perspectives on Very Low Nicotine Content Cigarettes
Speaker: *Jessica Kulak, University at Buffalo*

18.2 Expectations and Patterns of Electronic Nicotine Delivery Systems (ENDS) Use Among Older Adults who Smoke Cigarettes Within a Nationwide RCT
Speaker: *Margaret Fahey, Medical University of South Carolina*

18.3 Racial and Ethnic Differences in Lung Cancer Screening Eligibility and Health Services Utilization Among Older Smokers in the U.S.
Speaker: *Jaqueline Avila, University of Massachusetts Boston*

18.4 Representation of Older Adults in Tobacco Flavoring Research
Speaker: *Bethea Kleykamp, BAK and Associates*

10:30 A.M. - 12:00 P.M.

**SYMPOSIUM: THE INTERSECTION OF COVID-19 AND SUBSTANCE USE DISORDERS
Grand Ballroom II**

Chair: *Carlos Blanco, National Institute on Drug Abuse*

Co-Chair: *Leonardo Angelone, DHHS/National Institute on Drug Abuse*

This symposium will present a variety of epidemiological and health services responses to the intersection of the COVID-19 pandemic and substance use disorders and overdose. Dr. Ramsey will present an overview of changes in overdose deaths in New York State during COVID-19, innovative practices in the delivery of SUD treatment services during that period and lessons learned for the future. Dr. Halden will discuss the use of wastewater-based epidemiology to monitor community levels of SARS-CoV-2 as well as opioids, as well as opportunities and limits of information gleaned from wastewater analysis.

Dr. Jones will discuss a series of analyses examining use of telehealth for opioid use disorder prior to and during the COVID-19 pandemic among the Medicare population. The analyses explore use of telehealth services and impacts on receipt of medications for opioid use disorder (MOUD), MOUD retention, experiencing medically treated overdose, and overdose death.

There will be a discussion among all panelists regarding changes in Federal- and state-level legislation and regulations, innovations to increase access to MOUD, approaches to workforce support and augmentation and innovations to increase access to overdose prevention, such as naloxone distribution, syringe services programs, drug checking, and overdose prevention centers.

Throughout the symposium, there will be multiple opportunities for interaction with the audience to ensure that the approach is participative and inclusive, rather than adopting a top-down didactic approach.

19.1 COVID-19 and Substance Use: Lessons Learned and where Do We Go from Here?

Speaker: *Kelly Ramsey, NYS OASAS*

19.2 Examining the Relationship between Use of Emergency Authorities to Support Oud Treatment and Outcomes in the Medicare Population during the COVID-19 Pandemic

Speaker: *Christopher Jones, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention*

10:30 A.M. - 12:00 P.M.

SYMPOSIUM: STIMULATION FOR THE TREATMENT OF STIMULANT USE DISORDER

Plaza Ballroom D

Chair: *Katrina Foster, NIH/NIDA/DTMC*

Co-Chair: *Jennifer Wong, National Institute on Drug Abuse*

Stimulating the Brain to Treat Stimulant Use Disorder: Stimulant use disorder (StUD) is a significant public health concern. In 2020, over 5 million people aged 12 and older reported past year use of stimulants (SAMHSA, 2021). Currently, there are no FDA approved treatments for this devastating disorder despite decades of research focused on developing pharmacotherapies. Neuromodulation provides a new direction for developing treatments for StUDs. This treatment modality has already been authorized by the FDA for smoking cessation and mental health disorders, such as depression. Neuromodulation involves the alteration of nerve activity through targeted delivery of a stimulus, such as electrical or magnetic stimulation to specific brain area(s) to modulate behavior. Examples of neuromodulation include Deep Brain Stimulation (DBS), Transcranial Magnetic Stimulation (TMS) and Low-intensity Focused Ultrasound (LIFU). There are pre-clinical data demonstrating that neuromodulation is effective in reducing drug-seeking behavior (Knapp CM et al., 2009; Friedman A et al., 2010; Fakhrieh-Asl G et al., 2020). Moreover, preliminary data show that neuromodulation reduces alcohol, cocaine and methamphetamine use (da Silva MC et al, 2013; Batra et al., 2017; Hang S et al., 2020). Neuromodulation for the treatment of StUDs is in the early stages but significant advances are being made in clinical studies. This symposium focuses on compelling clinical neuromodulation data for the treatment of StUD and StUD craving from three different types of neuromodulation, as well as having the FDA provide guidance on the authorization pathway for new devices.

20.1 Low Intensity Focused Ultrasound (LIF) as a New Tool to Treat Cocaine Use Disorder

Speaker: *Nassima Ait-Daoud Tiouririne, University of Virginia School of Medicine*

20.2 Development of Portable Neuromodulatory Intervention to Reduce Craving in Cocaine Addiction
Speaker: *Abhishek Datta, Soterix Medical*

20.3 Deep Brain Stimulation for Treatment Refractory Methamphetamine Use Disorder
Speaker: *Joseph Sakai, University of Colorado School of Medicine*

20.4 The Approval Process for New Devices and the Data Needed for This Process
Speaker: *Pamela Scott*

10:30 A.M. - 12:00 P.M.

FORUM: RESTRUCTURING THE PATHWAY FROM DISCOVERY TO DISSEMINATION OF NEW MEDICATIONS IN THE ACADEMIC ENVIRONMENT

Grand Ballroom I

Chair: *Charles France, University of Texas Health Science Center*

Co-Chair: *Jennifer Potter, University of Texas Health San Antonio*

Discovery, development, dissemination, and implementation of treatments for substance use disorders (SUD) can be inefficient and ineffective, particularly in academic environments, thereby delaying the availability of medications to patients most in need. Scientific evidence clearly shows that medications can be effective for treating SUD and that with comprehensive care recovery is achievable. Despite the availability of effective medications (e.g., buprenorphine for opioid use disorder), relatively few individuals who need treatment receive a medication. Barriers to uptake of new medications include stigma surrounding SUD, misinformation, and policy regulations surrounding prescribing. One approach to mitigate these barriers is adjusting the manner by which new discoveries become treatments. This forum will discuss the potential value of bidirectional translational conversations across the spectrum of stakeholders, from drug discovery to patients, early and throughout the process of medication development, and from community-oriented solutions back to basic scientists to identify mechanisms of action. Discussion topics will include an adapted translational model for medication development for SUD, including adjusting the typical sequential process of translational science to a parallel interactive process. This model of translational research proposes that activities such as those that are typically conducted in T3 and T4 (e.g., dissemination and implementation research to address potential barriers and discover facilitators) are conducted in parallel with the earlier stages of development, starting with stage T0. Examples of current research will highlight how early engagement of implementation and dissemination research can accelerate the manner by which drugs for treating SUD become available as treatment options.

21.1 Integrated Research to Support Multi-Level Readiness for Evidence-Based Care
Speaker: *Tara Karns-Wright, The University of Texas Health Science Center At San Antonio*

21.2 Community Engagement to Facilitate Dissemination and Implementation of SUD Innovations
Speaker: *Kasey Claborn, The University of Texas At Austin*

21.3 The Impact of Physical Activity on Biological Circadian Rhythms in Early Remission From Alcohol Use Disorder
Speaker: *Susette Moyers, Oklahoma State University- Center for Health Sciences*

21.4 Immune Biomarkers to Accelerate Drug Discovery in Substance Use Disorders
Speaker: *Elise Marino, University of Texas Southwestern Medical Center At Dallas*

2:00 P.M. - 3:15 P.M.

HUMAN FORUM: NOTHING ABOUT US WITHOUT US: ENGAGING INDIVIDUALS WITH LIVED EXPERIENCE OF SUBSTANCE USE DISORDERS IN SUBSTANCE USE RESEARCH DEVELOPMENT AND IMPLEMENTATION

Grand Ballroom I

Chair: *Omayma Alshaarawy, Department of Family Medicine. Michigan State University College of Human Medicine.*

Co-Chair: *Rachel Luba, New York State Psychiatric Institute*

Involving individuals with lived experience of substance use disorders (LESUD) in research is increasingly recognized as a critical strategy to reduce stigma, develop effective personalized interventions, and enhance policy recommendations. Individuals with LESUD are well-positioned to identify research challenges and intended outcomes, perform outreach activities, develop referrals, foster trust, and disseminate findings to the community. Accordingly, several organizations (e.g., SAMHSA and NIDA) now strongly encourage researchers to engage individuals with LESUD and their families in all steps of research process including grant proposal development, implementation, and review. The College of Problems on Drug Dependence Human Research Committee presents a forum focusing on guiding principles to ensure purposeful engagement of individuals with LESUD in SUD research. Forum speakers will give overviews of effective collaborations with organizations representing individuals with SUD, study planning, data collection methods and analysis, and dissemination of findings. The forum will provide attendees with different perspectives and best practices to collaborate with individuals with LESUD to design effective and responsive research programs and enhance clinical practice and public policy.

22.1 What do we do When Everyone With Lived Experience Wants to Help? Insights From a Recent Research Project of College Students With Histories of Addiction

Speaker: *Noel Vest, Boston University*

22.2 Qualitative Interviews to Inform Research on and Implementation of Effective Treatments for OUD: How Can the Perspectives of People With LESUD Shape Our Definitions of Clinically-Meaningful Outcomes?

Speaker: *Manesh Gopaldas, Columbia University*

22.3 Supporting Technology Use and Harm Reduction Within a Housing First Framework

Speaker: *Tessa Frohe, University of Washington*

2:00 P.M. - 3:15 P.M.

ANIMAL FORUM: THE 3RS CONCEPT OF REPLACEMENT: FUTURE TOOLS OR POLITICAL STRATEGY?

Grand Ballroom II

Chair: *James Rowlett, University of Mississippi Medical Center*

The “3Rs” concept was introduced in the 1959 by Russell and Birch, and consists of “Replacement”, “Reduction”, and “Refinement”. At present, these concepts play a central role in animal welfare and regulation of animal research worldwide. However, the concept of “replacement” (originally defined as scientific method using non-sentient material instead of conscious living vertebrates) has been used increasingly to promote the complete abolition of all animal-based research (e.g., US FDA Modernization Act passed Oct 2022 by the Senate). Nevertheless, research on alternatives to animals is a viable and active field. To discuss recent issues in the area of non-animal research alternatives, Dr. James Rowlett will introduce the topic and provide updates from the political arena. Dr. Robert Hester will discuss his use of animals for physiological research and his responsibility serving as IACUC Chair at the University of Mississippi Medical Center. He will then present how computer simulation of physiology was initially used to plan animal experiments, then his work on the development of computer simulation for understanding physiology and how investigators and companies are using physiological simulation for virtual clinical trials. Our primary goal is to provide perspectives (sometimes competing ones) on the realities of replacement, and to provide informed responses to challenges that animal research is outdated, including evidence-based knowledge for when alternatives are available and appropriate.

23.1 Non-Animal Alternatives as Political Strategy

Speaker: *James Rowlett, University of Mississippi Medical Center*

23.2 Animal Experimentation or Computer Simulations? Both are Needed

Speaker: *Robert Hester, University of Mississippi Medical Center Department of Physiology*

3:30 P.M. - 5:00 P.M.

SYMPOSIUM: 10 YEARS GONE: REMEMBERING BILL WOOLVERTON THROUGH HIS IMPACT ON OUR CURRENT RESEARCH PROGRAMS

Plaza Ballroom A

Chair: *Sally Huskinson, University of Mississippi Medical Center*

Co-Chair: *Michael Nader, Wake Forest University School of Medicine*

Considerable progress in understanding substance use disorders has been made using nonhuman animal models. This symposium will highlight the profound contributions of such research and its translational impact made by one of CPDD's long-time members, Bill Woolverton, on the 10th anniversary of his passing. Bill was passionate about rigorous experimental designs using operant procedures, with a focus on translating these preclinical findings to clinical applications. Dr. Nader will discuss the use of concurrent food-drug schedules of reinforcement to model vulnerability to substance misuse, which began for Bill during the late 1980's and while at the University of Chicago, and how these models can inform interpretations of reinforcing strength and intervention strategies involving polysubstance use. Dr. Rowlett will explore mechanisms of reinforcement and how they tie into, or are explained by, other pharmacological effects engendered by drugs using examples from his research using nonhuman primates, which originated after joining the Bill Woolverton Band (1993-1997) at the University of Mississippi Medical Center. Dr. Freeman will discuss the study of drugs as punishers and the translational implications of Bill's efforts for the development of abuse-deterrent formulations for prescription drugs. Bill had a deep appreciation for the powerful role of the environment, and Dr. Huskinson will discuss environmental determinants of drug vs. non-drug choice, including delay and variable schedules of reinforcement. The session will conclude with moderated discussion of, and reflection on, Bill's substantial legacy and the growth opportunities stemming from his impressive body of work.

24.1 Bill was Right: For Most Research Questions, Models of Reinforcing Efficacy are the Best

Speaker: *Michael Nader, Wake Forest University School of Medicine*

24.2 Woolverton's "3Ms": Monkeys, Music, and Mississippi

Speaker: *James Rowlett, University of Mississippi Medical Center*

24.3 Bill Woolverton and the Study of Drugs as Punishers: Translational Growth From a Bedrock of Rigor

Speaker: *Kevin Freeman, University of Mississippi Medical Center*

24.4 Looking out Instead of in: How Bill Inspired us to Study Context in Drug Taking

Speaker: *Sally Huskinson, University of Mississippi Medical Center*

3:30 P.M. - 5:00 P.M.

WORKSHOP: EARLY CAREER MEMBER COMMITTEE: NAVIGATING A CAREER IN ADDICTION SCIENCE

Grand Ballroom II

Chair: *Danielle Davis, Yale University School of Medicine*

Co-Chair: *Denise Vidot, University of Miami School of Nursing and Health Studies*

Despite a wide range of career paths available to scientists in the substance use and addiction fields, knowledge on how to navigate a career can be limited. This gap in knowledge can be a function of limited access to resources, mentorship, and/or institutional knowledge. Opportunities may exist for emerging addiction scientists that are well suited for their skillsets or expertise but are otherwise inaccessible due to a lack of knowledge on how to pursue certain career paths. The purpose of this workshop is to provide early career attendees at CPDD the opportunity to hear from a diverse group of addiction scientists from a range of professions spanning academia, industry, and government agencies. This workshop will provide valuable information to early career scientists about skill sets, expertise, and experiences needed for various careers and the benefits of different career paths. Our speakers include preclinical, clinical, and epidemiological addiction scientists with experience in Industry positions, government agencies, and both research-focused and teaching-focused academic institutions. Presenters will share experiences that prepared them for their

careers, describe their day-to-day work, and discuss available growth opportunities. Presentations by speakers will be followed by breakout groups to allow early career attendees to ask directed questions about specific careers. CPDD is successful, in part, because of dedicated scientists with careers in academia, industry, and government who collaborate to advance the understanding of addiction science. This workshop will provide critical insights for early career attendees, facilitate unique networking opportunities, and will ultimately enrich the future membership of CPDD.

25.1 Addiction Science Research at a Primarily Undergraduate Institution: Balancing the Classroom and Laboratory

Speaker: *Ryan Lacy, Franklin and Marshall College*

25.2 Federal Regulatory Scientist: Evaluating Drug Abuse-Potential

Speaker: *Jovita Randall-Thompson, US Food and Drug Administration*

25.3 Trading Paces: One Perspective on the Journey From Academia to Industry

Speaker: *Erica Peters, Canopy Growth Corporation*

25.4 The Role of the Psychiatrist in Academic Research

Speaker: *Denis Antoine, Johns Hopkins University School of Medicine*

25.5 Navigating Non-Academic Careers in Addiction Science

Speaker: *Alexandra Duncan, The Pew Charitable Trusts*

TUESDAY, JUNE 20, 2023

8:00 A.M. - 9:30 A.M.

SYMPOSIUM: THE RACIST ORIGINS AND IMPACT OF THE WAR ON DRUGS

Grand Ballroom II

Chair: *Bryon Adinoff, Doctors for Cannabis Regulation*

Co-Chair: *Brenda Curtis, NIH/NIDA-IRP*

The Black Lives Matter (BLM) movement has raised awareness of the systemic racism embedded in the laws, institutions, and culture of the U.S. A key driver of systemic racism is the War on Drugs. Most U.S. drug laws were promoted to the public using racist arguments and have been used to disenfranchise and incarcerate millions of individuals, particularly people of color. Consequences include arrests, incarcerations, violent policing, and the lifelong effects of an arrest/prison record upon education, employment, housing, and child custody. The criminal consequences of illicit drug use make our field of medicine unique in that suffering from an addictive illness (e.g. opioid use disorder) is punishable by law, even in the absence of harm. Moreover, criminal punishment can also exacerbate mental illness and contribute to problematic drug use. Nevertheless, addiction-related medical and research organizations by and large continue to either support drug prohibition or remain silent. In this symposium, the speakers will provide an overview of the origins and impact of drug prohibition, the centrality of race and stigma to the prohibitionist structure, and the role of the addiction research community in resolving the inherent conflict between an illicit drug use disorder as a criminal behavior vs. biologic illness. A moderated discussion will allow audience input into the role the CPDD community can play to re-orient society's focus on drug prohibition to evidence-based drug treatment, where appropriate.

26.1 The Racist Origins and Impact of the War on Drugs

Speaker: *Maritza Perez Medina, Office of Federal Affairs*

26.2 The Dehumanization of Substance Users

Speaker: *Brenda Curtis, NIH/NIDA-IRP*

26.3 The Role of Addiction Researchers in Righting the Wrongs of the Drug War

Speaker: *Bryon Adinoff, Doctors for Cannabis Regulation*

8:00 A.M. - 9:30 A.M.

SYMPOSIUM: THE PAST, PRESENT, AND FUTURE OF REINFORCER PATHOLOGY THEORY IN SUBSTANCE USE DISORDER

Plaza Ballroom A

Chair: *Justin Strickland, Johns Hopkins University School of Medicine*

Co-Chair: *Warren Bickel, Fralin Biomedical Research Institute at VTC*

Behavioral economics is an interdisciplinary field that uses psychological, economic, and neuroscience principles to inform behavioral health and decision-making science. Advances in behavioral economic research have culminated in the development of a novel conceptual framework – Reinforcer Pathology Theory. Reinforcer Pathology Theory posits that reinforcers are integrated over a temporal window that determines the relative value of drugs and prosocial alternatives such that brief, immediate, intense, and reliable reinforcers (e.g., substance use) are overvalued compared to alternatives lower in their intensity, variable in their outcome, and delayed in their value accumulation (e.g., employment). This session will trace the past, present, and future of Reinforcer Pathology Theory using data from diverse drug classes and preclinical, human laboratory, and clinical settings. We will first describe the development and evolution of Reinforcer Pathology Theory along with basic science tests of diverse phenomena explained by this theoretical framework (e.g., alternative reinforcer and satiation hypotheses). Speakers will then discuss applications of Reinforcer Pathology Theory to behavioral and medications development work in substance use disorder. These data will demonstrate improved translational potential achieved through Reinforcer Pathology Theory across a pipeline of preclinical rodent studies to the human laboratory to clinical assessment. A public health view of Reinforcer Pathology Theory will then be explained, and how these approaches have rendered novel insights to guide policy development and thus garnered widespread attention outside of academia. The session will conclude with a moderated discussion of future theory refinement and applications for new intervention contexts.

27.1 Reinforcer Pathology: Contemporary Status and Future Directions

Speaker: *Warren Bickel, Fralin Biomedical Research Institute at VTC*

27.2 Understanding the Effects of Visual Exposure to Nature on Substance Demand and Discounting Using Reinforcer Pathology

Speaker: *Meredith Berry, University of Florida*

27.3 Applying Behavioral Economics and Reinforcer Pathology Theory to Improve Translational Medications Development

Speaker: *Justin Strickland, Johns Hopkins University School of Medicine*

27.4 The Historical Precedence and Translational Promise of Reinforcer Pathology Theory in Public Health Policy for Substance Use Disorder

Speaker: *Derek Reed, University of Kansas*

8:00 A.M. - 9:30 A.M.

SYMPOSIUM: DYSREGULATION OF THE PREFRONTAL CORTEX IN SUBSTANCE USE DISORDERS

Plaza Ballroom D

Chair: *Jacqueline McGinty, Medical University of South Carolina*

Co-Chair: *Kathryn Cunningham, John Sealy School of Medicine University of Texas Medical Branch*

Dysregulation of the medial prefrontal cortex (mPFC) during substance use disorders (SUDs) is a major characteristic of relapse to drug seeking and the cognitive deficits that accompany relapse. However, we know little about the phenotypes that result from structure and functional mPFC deficits in impulse control and executive decision-making during SUD development. Recent evidence indicates that abused drugs disrupt regulation of mPFC pyramidal neurons by fast-spiking, parvalbumin (PV)-expressing interneurons and the perineuronal nets (PNNs) that surround them. In this symposium, a diverse panel of investigators who represent multi-disciplinary perspectives will address these issues and more. To introduce the clinical

context, F. Gerard Moeller (VCU) will discuss human brain effective connectivity engaging the mPFC to gain a richer “fingerprint” of the complex neurocircuitry and behavior to develop precise diagnoses and make therapeutic decisions in SUDs. Barbara Sorg (Legacy Research Institute) will discuss the effects of repeated cocaine on PNNs and synaptic excitability of PV interneurons in the mPFC as well as the impact of mPFC PNN removal on communication between the mPFC and hippocampus during consolidation of cocaine-associated memories. Antonieta Lavin (MUSC) will discuss the role of PV-positive interneurons in METH- induced hypofrontality and its resulting cognitive deficits. Kathryn Cunningham (UT Galveston) will highlight preclinical studies of serotonin target-phenotype relationships engaging mPFC circuitry which precipitate SUD risk. Altogether this panel will highlight the importance of the relationship between specific PFC neuronal subpopulations in preclinical and clinical models that expand our understanding of clinical phenotypes of SUDs.

28.1 Human Brain Connectivity as a Fingerprint of Neurocircuitry and Behavior

Speaker: *F. Gerard Moeller, Virginia Commonwealth University*

28.2 Impact of Perineuronal Nets on Reconsolidation of Cocaine-Associated Memories and Prefrontal-Hippocampal Coupling During Cocaine Cue Acquisition

Speaker: *Barbara Sorg, Legacy Research Institute*

28.3 Chronic Methamphetamine Administration Produces Cognitive Deficits Through Augmentation of Gabaergic Synaptic Transmission in the Prefrontal Cortex

Speaker: *Antonieta Lavin, MUSC, Dept. of Neuroscience*

28.4 Prefrontal Cortex 5-HT_{2A} and 5-HT_{2C} Receptors Control Target Behaviors Allied With Cocaine Use Disorder

Speaker: *Kathryn Cunningham, John Sealy School of Medicine University of Texas Medical Branch*

8:00 A.M. – 9:30 A.M.

**SYMPOSIUM: BEYOND GWAS: THE GENETICS AND EPIGENETICS OF ADDICTION
Governor’s Square 15**

Chair: *Jonathan Pollock, National Institute of Drug Abuse, National Institutes of Health*

Co-Chair: *Arpana Agrawal, Washington University School of Medicine*

GWAS studies are rapidly identifying variants underlying addiction and complex psychiatric disorders. These variants are being found within the coding regions of genes and in non-coding regions of the genome. Understanding how these different types of variants contribute to addiction and behaviors associated with addiction requires approaches that identify functional consequences, assess gene x gene interactions within gene networks, and creation of addiction risk scores associated with these variants. In this symposium, we will discuss technologies that uncover the underlying biology of GWAS variants using three different approaches: identifying function through analysis of variant-specific chromatin changes, machine learning, and analysis of short tandem repeats.

29.1 Substance Use Disorders in 3D Genome

Speaker: *Hyejung Won, University of North Carolina at Chapel Hill*

29.2 Transcriptomic Profiling of the Opioid Exposed Human Ventral Midbrain at Single Nuclei Resolution

Speaker: *Schahram Akbarian, Icahn School of Medicine at Mount Sinai*

29.3 Systems Biology Integration of Multi-Omic Data Reveals Biological Pathways Underlying Substance Use Disorders

Speaker: *Kyle Sullivan, Oak Ridge National Laboratory*

29.4 The Contribution of Short Tandem Repeats to Splicing Variation in Humans

Speaker: *Yang Li, University of California - San Diego*

8:00 A.M. - 9:30 A.M.

SYMPOSIUM: NOT LIKE OTHER OPIOIDS: HOW IS FENTANYL UNIQUE?
Grand Ballroom I

Chair: *Kelly Dunn, Johns Hopkins University School of Medicine*

Co-Chair: *Andrew Huhn, Johns Hopkins University School of Medicine*

Illicitly manufactured fentanyl has infiltrated and, in many places, completely replaced the heroin product in the United States and Canada. Fentanyl has many unique characteristics that distinguish it from other opioid agonists and make it a particularly nefarious compound. Specifically, the mechanisms through which fentanyl exerts effects leads to differences in its subjective effect profile and withdrawal experience and increases its lethality relative to other opioids, putting patients at extreme risk and complicating conventional treatment strategies. This symposium brings together researchers from several disciplines to discuss these unique features. First, Dr. Sandra Comer will discuss fentanyl's unique pharmacodynamic profile relative to other opioids. Next, Dr. Jaime Yanez-Farfan will discuss fentanyl's secondary peaking profile, an effect that is not typically observed in persons using other opioid agonists. Third, Dr. Phillip (Randy) Torralva will review preclinical evidence of the unique lethality of fentanyl-induced vocal cord (glottic) closure (FIVCC) as it relates to fentanyl overdose in humans. Finally, Dr. Kelly Dunn will present data on withdrawal and play recorded (and anonymized) conversations with persons who have lived experience with illicit fentanyl exposure to illustrate patient-reported differences in the experience of withdrawal following fentanyl versus heroin as well as during buprenorphine inductions. A panel discussion, moderated by Dr. Andrew Huhn, will focus on how these distinct features make fentanyl uniquely challenging relative to other opioids and review the epidemiological, clinical, and preclinical research that is needed to help advance the care of patients.

30.1 Pharmacology of Fentanyl and its Implications for Treatment of Opioid Use Disorder and Overdose
Speaker: *Jermaine Jones, Columbia University Irving Medical Center*

30.2 Multiple Peaking Phenomena in Fentanyl Disposition
Speaker: *Jaime Yanez, Universidad Norbert Wiener*

30.3 Preclinical Evidence of Fentanyl-Induced Vocal Cord Closure (FIVCC)- Relevance to Fentanyl Overdose in Humans
Speaker: *Phillip Torralva, Oregon Health and Science University / Torralva Medical Therapeutics, INC.*

30.4 Withdrawal From Fentanyl is Different: Data Presentation and First-Hand Accounts From Persons With Lived Experience
Speaker: *Kelly Dunn, Johns Hopkins University School of Medicine*

Moderator: *Andrew Huhn, Johns Hopkins University School of Medicine*

10:00 A.M. - 11:30 A.M.

INNOVATOR SYMPOSIUM: MEDICATION DEVELOPMENT FOR METHAMPHETAMINE USE DISORDER
Plaza Ballroom A

Chair: *Linda Dwoskin, University of Kentucky*

Methamphetamine Use Disorder (MUD) afflicts 2.6 million US citizens, caused >23,000 US deaths in 2020, and imposes an economic burden of >\$600B annually. MUD is the compulsive, chronic use of methamphetamine, causing devastating health consequences (e.g., psychotic behavior, brain and heart damage, death) and harm to communities (e.g., crime, unemployment, child neglect or abuse). There are currently no FDA approved medications to treat MUD. Methamphetamine increases extracellular dopamine by inhibiting cellular uptake and reversing transport at the vesicular monoamine transporter-2 (VMAT2). Blocking methamphetamine's effects at VMAT2, and thus blocking METH-induced reward and relapse, could lead to a MUD pharmacotherapy. Our late lead preclinical candidate VMAT2 inhibitor, UKY-21, potently ($K_i = 31$ nM) inhibits VMAT2 function with minimal interactions at potential off targets (dopamine transporter and hERG, K_i 's >100-fold higher than at VMAT2). UKY-21 evolved from a previously reported

series of related VMAT2 inhibitors with poor oral bioavailability and hERG liability. Oral administration of UKY-21 in rats, potently ($ID_{50} = 17\text{mg/kg/d}$) and effectively decreases methamphetamine self-administration without the development of tolerance. In vivo selectivity for UKY-21 is supported by failure to decrease cocaine self-administration at oral doses that decrease METH self-administration. UKY-21 has high oral bioavailability ($>65\%$ in rat) and provides durable exposure in plasma and brain, consistent with once daily oral dosing. UKY-21 is well tolerated in vivo in rat and appears to have an optimal safety pharmacology profile, including no significant hERG inhibition. Successful development of a pharmacotherapy for MUD would have a tremendously beneficial health and socioeconomic impact.

31.1 Mirtazapine for Methamphetamine Use Disorder

Speaker: *Phillip Coffin, San Francisco Department of Public Health*

31.2 Development of Biased Neurotensin Receptor 1 Ligands for the Treatment of Addiction

Speaker: *Lauren Slosky, University of Minnesota*

10:00 A.M. - 11:30 A.M.

SYMPOSIUM: THE POTENTIAL OF PSYCHEDELIC THERAPIES FOR SUBSTANCE USE DISORDERS

Grand Ballroom I

Chair: *Albert Garcia-Romeu, Johns Hopkins University School of Medicine*

Historically, clinical research with classic psychedelics such as LSD focused heavily on applications treating substance use disorders (SUDs). Meta-analysis of early controlled trials comparing LSD to non-psychedelic control conditions found a single high-dose LSD treatment was associated with significantly greater reductions in alcohol misuse than control. Similarly, a preliminary trial of high-dose LSD with residential treatment in formerly incarcerated men with a history of opioid dependence found significantly greater biologically verified opioid abstinence in the LSD vs. treatment-as-usual control condition up to 12 months post-treatment. These studies and anecdotal and observational reports on indigenous and naturalistic psychedelic use formed the basis for novel research on psychedelic therapies for SUD in the 21st century, with small preliminary trials of psilocybin and ayahuasca for various SUDs showing feasibility and promise. More recently, larger randomized controlled trials of psilocybin for SUD have been conducted. Published data from a placebo-controlled trial in patients with alcohol use disorder showed significantly greater reductions in heavy drinking days and daily alcohol consumption after two high doses of psilocybin with motivational enhancement therapy (MET) compared to placebo with MET. Available data from recently completed controlled trials of psilocybin-assisted treatment for tobacco and cocaine use disorder will also be discussed. Additionally, growing preclinical research is probing biological activity underlying psychedelics' anti-addictive effects. These findings will be examined in the context of investigating psychedelic therapies and their mechanisms and exploring the ramifications for potential psychedelic-assisted treatments for SUD.

32.1 Effects of Psilocybin in Treatment-Seeking Adults With Alcohol Use Disorder

Speaker: *Michael Bogenschutz, New York University Grossman School of Medicine*

32.2 Psilocybin Treatment for Cocaine Use Disorder

Speaker: *Peter Hendricks, The University of Alabama At Birmingham*

32.3 Effects of Psychedelics in Preclinical Models of Substance Use Disorders

Speaker: *Kevin Murnane, Louisiana State University Health Sciences Center - Shreveport*

32.4 Psilocybin-Assisted Smoking Cessation: A Randomized Controlled Trial

Speaker: *Matthew Johnson, Johns Hopkins University School of Medicine*

10:00 A.M. - 11:30 A.M.

**SYMPOSIUM: NEUROPEPTIDES IN REWARD, ADDICTION, AND MENTAL HEALTH
Plaza Ballroom D**

Chair: *Subramaniam Ananthan, DHHS/NIH/NIDA*

Co-Chair: *Lakshmi Devi, Icahn School of Medicine At Mount Sinai*

Neuropeptides are known to play a central role in physiological and pathological processes relating to reward, learning, memory, stress, addiction, and neurological disorders. Peptidomic studies using mass spectroscopy and single cell transcriptional profiling are revealing a surprising prevalence of neuropeptides in brain that are positioned to broadly modulate neural activity and behavioral functions. These findings offer novel targets for therapeutics development for neurobehavioral disorders. This symposium will feature presentations on innovations and recent advances in the field of neuropeptides and their signaling mechanisms in addiction, mental health, and psychiatric disorders.

33.1 The Role of Pituitary Adenylate Cyclase-Activating Polypeptide (PACAP) in Binge-Like Ethanol Drinking and Affective Behavior

Speaker: *Jessica Barson, Drexel University College of Medicine*

33.2 Extended Amygdala Neuropeptide Circuitry of Emotional Arousal

Speaker: *William Giardino, Stanford University*

33.3 Endogenous Opioid Peptides and Novel Neuropeptides in Addiction, Reward, and Mental Health

Speaker: *Lakshmi Devi, Icahn School of Medicine At Mount Sinai*

10:00 A.M. - 11:30 A.M.

SYMPOSIUM: HOW NEUROIMAGING CAN BE USED IN TREATMENT DEVELOPMENT IN DRUG ADDICTION: FROM FDA STANDARDS TO CLINICAL APPLICATIONS

Grand Ballroom II

Chair: *Hamed Ekhtiari, University of Minnesota*

Co-Chair: *Sarah Yip, Yale University*

As a neurobiological process, addiction involves pathological patterns of engagement with substances and a range of behaviors with a chronic and relapsing course. Neuroimaging technologies assess brain activity, structure, physiology, and metabolism at scales ranging from neurotransmitter receptors to large-scale brain networks, providing unique windows into the core neural processes implicated in substance use disorders. Identified aberrations in the neural substrates of reward and salience processing, response inhibition, interoception, and executive functions with neuroimaging can inform the development of pharmacological, neuromodulatory, and psychotherapeutic interventions to modulate the disordered neurobiology. Neuroimaging measures can facilitate the development of a range of biomarkers that may prove useful in the arsenal of addiction treatments in the coming years. There is evidence that these markers of large-scale neural structure and activity may indicate vulnerability or separate disease subtypes, predict response to treatment, or provide objective measures of treatment response or recovery. Neuroimaging biomarkers can also suggest novel targets for interventions. Closed or open loop interventions can integrate these biomarkers with neuromodulation in real-time or offline to personalize stimulation parameters and deliver precise intervention. Given the sheer diversity and rapid advances in neuroimaging in recent years, this symposium will provide an overview of neuroimaging modalities in addiction, potential neuroimaging biomarkers, and future directions and challenges in bringing these putative biomarkers from the bench to the bedside. At the end, we will discuss an executive pathway to support FDA qualification for neuroimaging biomarkers in certain contexts of use and how other labs can contribute in this collective effort.

34.1 From Neuroimaging Markers to Biomarkers in Treatment Development

Speaker: *Lara Ray, University of California Los Angeles*

34.2 Brain-Based Predictive Modeling of Addiction

Speaker: *Sarah Yip, Yale University*

34.3 Neuroimaging as a Response Biomarker in Drug Development

Speaker: *Joseph Schacht, University of Colorado School of Medicine*

34.4 Neuroimaging as a Target Biomarker in Neuromodulation

Speaker: *Hamed Ekhtiari, University of Minnesota*

10:00 A.M. - 11:30 A.M.

**WORKSHOP: 29TH ANNUAL CONTINGENCY MANAGEMENT WORKING GROUP
Governor's Square 15**

Chair: *Matthew Novak, Johns Hopkins University School of Medicine*

Co-Chair: *Diann Gaalema, University of Vermont*

The Contingency Management (CM) Working Group, held annually during the CPDD convention, is an opportunity for the discussion and dissemination of current research regarding the use of CM interventions to promote behavior change and reduce drug use. CM is a behavioral treatment strategy that has demonstrated consistent success in promoting abstinence from a wide range of drugs and across many different treatment populations. It is also being used to promote change in behaviors impacting the course of other chronic diseases (e.g., obesity, diabetes). At the 29th annual meeting of the CM Working Group, junior and senior researchers will present preliminary data from ongoing studies involving CM. The goal for this working group is to provide an informal outlet for discussion of ongoing CM research, with an emphasis on developing or improving research strategies by seeking audience input and providing opportunities for junior and senior researchers to interact. As the goal for this working group has always been to provide an informal outlet for discussion of CM data, names of presenters are not included with this submission. Rather, participants and topics will be chosen during the Spring of 2023 to capture the most current data in contingency management research for presentation at our annual working group.

1:15 P.M. - 2:15 P.M.

**MINI-SYMPOSIUM: MONITORING AND DIAGNOSTIC DEVICES FOR SUBSTANCE USE
DISORDERS: CHALLENGES AND OPPORTUNITIES
Grand Ballroom I**

Chair: *Stacie Gutowski, National Institute on Drug Abuse, National Institutes of Health*

Co-Chair: *Kelly Dunn, Johns Hopkins University School of Medicine*

Medical devices can serve as tools for monitoring patients and/or diagnosing drug overdose to provide innovative solutions in the management of substance use disorders. New developments in hospital-based monitoring options can provide personalized pain management and medication dosing to reduce opioid exposure. Beyond the clinical environment, novel technological developments have led to monitoring for a wide range of real-time physiologic parameters in daily life including respiratory rate, blood oxygen saturation, heart rate, and electrodermal activity through wearable devices and accompanying mobile phone applications. These devices can be utilized by patients to provide instantaneous monitoring of the patient experience, such as identifying when a person is experiencing stress or anxiety and subsequently providing real-time options for social support, geo-located interventions (e.g., meetings, treatment centers), cognitive behavioral therapies through clinician or chat bot interactions. Additionally, medical devices are being developed to focus on the detection of opioid-induced respiratory depression, to monitor and possible alert bystanders and/or caregivers and allow for a timely administration of naloxone. As these devices are developed, we must discuss and understand the challenges and opportunities about which measures are most useful and the types of data output and alerts that will be accepted in this patient population.

36.1 Monitoring and Diagnostic Devices for Substance Use Disorders: Challenges and Opportunities

Speaker: *David Reeser, OpiAID, Inc.*

36.2 An EEG Biomarker for Opioids: Insights From the Operating Room to aid in the Opioid Crisis

Speaker: *Patrick Purdon, Harvard Medical School*

36.3 Wearable and On-Body Devices for Detection of Opioid Overdose

Speaker: *Michael Hite, Ayuda Medical*

2:45 P.M. - 3:45 P.M.

MINI-SYMPOSIUM: FROM INITIATION TO ADDICTION: A MEASURE OF THE FULL RANGE OF INVOLVEMENT FOR OPIOIDS, CANNABIS, AND ALCOHOL

Grand Ballroom I

Chair: *Ty Ridenour, RTI International*

Co-Chair: *Lissette Saavedra, RTI International*

This mini symposium will present an innovative measure of the full developmental continuum of substance use (SU) involvement from pre-initiation through physiological dependence onto which numerous other SU measures could be mapped. This measure could help delineate which stages of progression from earlier to later involvement are impacted by specific environmental risks, genetic mechanisms, and underlying neurophysiology as well as when and for whom prevention and treatment programs are most impactful. Involvement was tested using items on initiation, regular use, and SU disorder (SUD) criteria available in many commonly used datasets. Methods: National Survey on Drug Use and Health (NSDUH) datasets 2016-2019 (N=225,622) were analyzed using moderated non-linear factor analysis and traditional psychometric analyses to evaluate “anchor items” for recreating involvement measures in other datasets for alcohol, cannabis, prescription opioids, and heroin. NSDUH data represent noninstitutionalized U.S. civilians, ages 12 or older. Sample composition was 52.2% female; 58.3% non-Hispanic White, 12.8% non-Hispanic Black and 18.5% Hispanic; and 21.5% with an income below 2 times the poverty level. Results: Psychometrics in the general population and an elevated risk subsample supported involvement measures for each substance and overall SU involvement. Greater involvement with each substance was associated with SUDs of the same or other drugs (e.g., cocaine), major depression, risk taking, criminal behavior, and suicidality. Conclusions: Panelists will present study results; methods to create involvement measures in other datasets illustrated using NIH HEAL datasets; and how involvement could shed light on SUD etiology, prevention, treatment, and recovery.

37.1 Substance Use Involvement Associations With Risk Factors and Psychopathology

Speaker: *Barrett Montgomery, RTI International*

37.2 Development and Psychometrics of Substance Use Involvement Measures With Nonlinear Moderated Factor Analysis

Speaker: *Alexandra Tonigan, RTI International*

37.3 Substance Use Involvement Replication in Other Datasets and Potential Research Directions Illustrated With Heal Initiatives Studies

Speaker: *Ty Ridenour, RTI International*

WEDNESDAY, JUNE 21, 2023

8:00 A.M. - 9:30 A.M.

SYMPOSIUM: USING BIG DATA TO UNDERSTAND THE ROLE OF THE GUT MICROBIOME IN SUBSTANCE USE DISORDERS

Plaza Ballroom D

Chair: *Susan Wright, NIDA/NIH*

Co-Chair: *Kiran Vemuri, National Institute of Drug Abuse/NIH/DHHS*

Substance use disorders (SUDs) continue to be a significant public health challenge with negative health, social, and economic consequences. They are known to co-occur at high prevalence with several mental health disorders and can involve several different substances, including cocaine, opiates, cannabinoids, nicotine, and alcohol. While much SUD research has focused on the neurologic and genetic components of usage behavior, there is increasing interest in the role of the gut microbiome in the pathogenesis of SUD. With the continuous collection of large volumes of various data types, researchers are trying to facilitate microbiome research by building large reference data sets to serve as a foundation for new technologies and data analysis tools. This session will explore current research providing evidence that the gut microbiome is involved in SUDs and the challenges and opportunities for understanding the role of the microbiome in

health. Accordingly, the symposium will address key knowledge gaps in the field while describing relationships between the gut microbiome and various addiction or addiction-related behaviors. The panel will also discuss relevant models of drug-seeking behavior along with metagenomics, metabolomics, and proteomics approaches to identify molecular signatures underlying gut microbiome affects, including biomarkers that covary in the context of SUD.

38.1 Using Big Data to Understand the Role of Gut Microbiome in Substance Use Disorder

Speaker: *Jason Bubier, The Jackson Laboratory*

38.2 The Gut Microbiome in Modulating Binge Drinking

Speaker: *Yanjiao Zhou, UConn Health*

38.3 Utilizing Multi-Omics Approaches to Identify Molecular Signatures of Gut-Brain Signaling in Models of Fentanyl Use Disorder

Speaker: *Drew Kiraly, Wake Forest School of Medicine*

38.4 The Microbiome as a Risk Factor in Opioid Use Disorders

Speaker: *Jennifer Whistler, Center for Neuroscience*

8:00 A.M. - 9:30 A.M.

SYMPOSIUM: PREVENTION IS BETTER THAN CURE: EARLY INTERVENTION FOR SUBSTANCE USE DISORDERS

Governor's Square 15

Chair: *Gillinder Bedi, The University of Melbourne*

Co-Chair: *Carlos Blanco, National Institute on Drug Abuse*

Substance use disorders (SUD) commonly emerge during adolescence/young adulthood, a critical period of neurobiological and psychosocial development. Onset of SUD during this period confers risk of harm to the developmental trajectory, setting the stage for a cascade of future difficulties. Without intervention, SUDs can develop into chronic conditions, requiring multiple episodes of care. Yet, delayed treatment remains the norm and most treatments are targeted to the severe end of the SUD spectrum. There is a need to refocus intervention efforts towards the early stages of SUD to disrupt progression to more severe SUD and prevent adverse health outcomes. This symposium will provide an overview of the current limited evidence guiding early intervention strategies for SUD. We will review the clinical staging model in psychiatry and developments in early intervention psychiatry, assessing the utility of these frameworks for clinical addiction science. Early intervention depends on the presence of well-delineated early clinical phenotypes: the second speaker will use epidemiological data to assess whether clinical high-risk states for SUD can be identified. The second section of the symposium will present emerging evidence on early intervention methods. This will include data on implementation of screening, brief intervention and referral to treatment for adolescents in pediatric medical and school settings, and opportunistic early intervention in college students and youth presenting for emergency care. Speakers will highlight the potential for early intervention to modify negative effects of SUD across the life course, and the clear need for further research to enable these impacts to be realised.

39.1 Early Intervention for Substance Use Disorders: Lessons From Clinical Staging and Early Intervention Psychiatry

Speaker: *Gillinder Bedi, The University of Melbourne*

39.2 Is There a Clinical High Risk State for Substance Use Disorder? An Epidemiological Perspective

Speaker: *Carlos Blanco, National Institute on Drug Abuse*

39.3 Implementing SBIRT for Adolescent Substance Use in Pediatric Medical and School Settings

Speaker: *Christopher Hammond, Johns Hopkins University School of Medicine*

39.4 Opportunistic Early Intervention for Problematic Substance Use in Young People via University and Emergency Services

Speaker: *Leanne Hides, University of Queensland*

8:00 A.M. - 9:30 A.M.

SYMPOSIUM: DEVELOPMENT OF FENTANYL-TARGETED VACCINES TO DECREASE OVERDOSE FATALITIES

Grand Ballroom II

Chair: *Drew Townsend, NIDA DTMC*

Co-Chair: *Jason Sousa, National Institute on Drug Abuse*

Opioid-related fatalities have become the most common cause of death for Americans between 18-45 years of age. This surge in deaths may be attributable to the adulteration of illicit drugs (heroin, cocaine, methamphetamine) with fentanyl, leading to the unintentional exposure of illicit drug users to this highly potent opioid. Recent findings suggest that fentanyl-targeted vaccines can confer robust protection against fentanyl and structurally similar opioids. However, it is critical that the durability of fentanyl-targeted vaccines is closely examined preclinically to identify the most promising candidates for clinical testing. The aims of this symposium, organized by NIDA's Division of Therapeutics and Medical Consequences, include 1) educating the audience on the mechanisms of the leading anti-opioid vaccination strategies, 2) provide the current state of the science of opioid-targeted vaccines, and 3) discuss practical considerations of opioid vaccine development (e.g., preclinical vs. clinical endpoints, gaining IND approval, manufacturing). These goals will be accomplished by highlighting three approaches for vaccination under preclinical consideration and conclude with a preview of how these vaccines may be tested under human-laboratory conditions. The first speaker will share findings with a fentanyl-conjugated vaccine, a conventional and well-established approach for vaccination. The second speaker will share findings with a monoclonal vaccination approach for fentanyl. The third speaker will share data related to a novel "nanoparticle vaccine" approach. Finally, potential challenges to the forward translation of opioid-targeted vaccines towards clinical evaluation will be discussed.

40.1 Translation of Vaccines and Antibody Based Strategies Against Fentanyl and its Analogs

Speaker: *Marco Pravetoni, University of Washington School of Medicine*

40.2 Development of CSX-1004 Monoclonal Antibody for Treatment and Prevention of Fentanyl Overdose

Speaker: *Paul Bremer, Cessation Therapeutics*

40.3 Hybrid Nanoparticle as a Platform for Vaccine Development Against Opioids and Other Psychoactive Compounds

Speaker: *Chenming Zhang, Virginia Tech*

40.4 Clinical Testing of Opioid Vaccines: Lessons Learned

Speaker: *Sandra Comer, Columbia University and NYSPI*

Co-Presenter: *Rachel Luba, New York State Psychiatric Institute*

8:00 A.M. - 9:30 A.M.

SYMPOSIUM: LEAVING NO ONE BEHIND: ENDING THE HIV EPIDEMIC WITH TARGETED INTERVENTIONS FOR PEOPLE WHO USE DRUGS

Grand Ballroom I

Chair: *Joy Schmitz, University of Texas Health Science Center*

Co-Chair: *Angela Heads, The University of Texas Health Science Center At Houston*

In 2019, the US announced a plan to End the HIV Epidemic by 2030. People who use drugs (PWUD) are disproportionately affected by the epidemic, due in part to low rates of HIV testing and insufficient access to HIV prevention and care services. Consequently, many PWUD do not benefit from highly efficacious HIV prevention and treatment interventions, such as pre-exposure prophylaxis (PrEP) and antiretroviral therapies (ART). Effectively ending the HIV epidemic involves improving HIV prevention and treatment outcomes for PWUD so that no one is left behind. In this symposium, speakers will present progress being made in the development of integrated interventions, encompassing a range of substances of abuse, treatment delivery

modalities, and affected populations. Dr. Christopher Kahler will present findings from a factorial randomized controlled trial of telehealth interventions to reduce substance use in men who have sex with men (MSM) living with HIV. Dr. Glenn-Milo Santos will discuss the use of intermittent naltrexone with an in-the-moment ecological momentary intervention to increase PrEP and ART adherence in MSM who use methamphetamine. Research presented by Dr. Adam Carrico will focus on optimizing contingency management to improve HIV prevention and care with sexually minority men who use stimulants. Finally, Dr. Jennifer Jain will present an intervention approach that addresses stigma-related barriers to HIV care engagement among racially diverse women living with HIV who use drugs. Drs. Joy Schmitz and Angela Heads will summarize the talks and moderate a discussion on research priorities for addressing the intersection of substance use and HIV.

41.1 Leaving No One Behind: Ending the HIV Epidemic With Targeted Interventions for People who Use Drugs

Speaker: *Christopher Kahler, Brown University School of Public Health*

41.2 Pharmacotherapy With an Ecological Momentary Intervention to Increase Pre-Exposure Prophylaxis and Anti-Retroviral Therapy Adherence Among Men who Have Sex With Men who Use Methamphetamine

Speaker: *Glenn-Milo Santos, University of California San Francisco*

41.3 Optimizing the Benefits of Contingency Management for HIV Prevention and Care With Sexual Minority Men who Use Stimulants

Speaker: *Adam Carrico, University of Miami*

41.4 WISH: Women, Intersectionality, Substance Use, and HIV

Speaker: *Jennifer Jain, University of California, San Francisco*

10:00 A.M. - 11:30 A.M.

SYMPOSIUM: TREATING SUD IN PATIENTS WITH PTSD AND HISTORIES OF VICTIMIZATION

Grand Ballroom I

Chair: *Carrie Mulford, National Institute on Drug Abuse, National Institutes of Health*

PTSD and SUD commonly co-occur, with approximately 30% of youth and 50% of adults with PTSD also meeting criteria for SUD. Traumatic experiences are risk factors for the development of SUD. Moreover, the co-occurrence of PTSD and SUD is associated with more severe symptoms and worse clinical outcomes. This panel will present research demonstrating that integrated treatment of comorbid PTSD and SUD, is feasible and effective in reducing symptoms of both disorders. The first presentation will identify neurobiology and symptomatology common to comorbid PTSD and SUD and review the clinical impact of co-occurring disorders. The second presenter will summarize results from the Collaboration Leading to Addiction Treatment and Recovery from Other Stresses (CLARO) study, a randomized controlled trial comparing the effectiveness of collaborative care for patients with co-occurring OUD, PTSD and/or depression. In this presentation, the authors will describe and compare adult patients who have OUD and co-occurring PTSD with and without traumatic experiences of victimization. The third presentation will provide an overview of research on Risk Reduction through Family Therapy (RRFT), including preliminary findings from an ongoing effectiveness implementation trial in adolescent outpatient clinics. RRFT is an integrative, exposure-based treatment for youth that incorporates best-practice interventions for PTSD, SUD, and related health risk behaviors. The final presentation will present preliminary outcomes from an RCT examining the efficacy Concurrent Treatment of PTSD and Substance Use Using Prolonged Exposure - Adolescent (COPE-A), a 16-session intervention, on substance use and PTSD outcomes for adolescents and young adults.

42.1 Comorbid Ptsd and Substance Use disorders: Shared Symptomatology and Neurobiology

Speaker: *Jesse Hinckley, University of Colorado School of Medicine*

42.2 Challenges in Addressing Victimization for People who Have Opioid Use Disorder and Probable PTSD

Speaker: *Lisa Meredith, RAND*

Co-Presenter: *Grace Hindmarch, RAND Corporation*

42.3 Advancing Treatment for Adolescents with Co-Occurring Substance Use Disorders (SUDs) and Posttraumatic Stress Disorder (PTSD): Risk Reduction through Family Therapy

Speaker: *Zachary Adams, Indiana University School of Medicine*

Moderator: *Devin Banks, University of Missouri--St. Louis*

10:00 A.M. - 11:30 A.M.

SYMPOSIUM: DRIVING IMPAIRMENT CAUSED BY THE USE OF CANNABIS AND OTHER DRUGS: RECENT EVIDENCE FROM HUMAN LABORATORY STUDIES

Grand Ballroom II

Chair: *Tory Spindle, Johns Hopkins University School of Medicine*

Co-Chair: *Carlos Zamarripa, Johns Hopkins University School of Medicine, Department of Psychiatry*

The global expansion of cannabis legalization for medical and “recreational” purposes has created an urgent need for research on cannabis-induced driving impairment. Controlled studies demonstrate that cannabis can impair driving performance and epidemiological evidence shows that: 1) driving under the influence of cannabis is increasing, and 2) cannabis-positive drivers have an increased crash risk. However, there are currently no validated methods to detect cannabis-impaired drivers and novel approaches are sorely needed. Further, many novel cannabis products (e.g., edibles) have emerged that remain understudied. Finally, given the heterogeneity in cannabis users, there is a need to characterize impairment among different groups (e.g., medical vs recreational users) and to evaluate individual differences in impairment. This symposium includes four presentations describing data from human laboratory studies featuring sophisticated driving simulators. Dr. Austin Zamarripa will present a study evaluating the individual and interactive effects of cannabis edibles and alcohol on driving performance. Dr. Thomas Arkell will present research on the effects of real-world medical cannabis use on driving/cognitive performance. Dr. Jan Ramaekers will present data showing neural mechanisms underlying individual differences in cannabis-induced impairment. Lastly, Dr. Amie Hayley will describe a novel impairment-detection approach (Driver Monitoring Systems, DMS) that evaluates fitness to drive using eye-tracking; the effectiveness of DMS at detecting drug/alcohol-induced impairment and future applications of this technology will be discussed. Dr. Tory Spindle will synthesize findings from these studies and facilitate an interactive discussion, with an emphasis on U.S. and global policy implications and possible future directions in the driving impairment field.

43.1 Individual and Interactive Effects of Oral Cannabis Products (i.e., "Edibles") and Alcohol on Driving Impairment

Speaker: *Carlos Zamarripa, Johns Hopkins University School of Medicine, Department of Psychiatry*

43.2 Acute Effects of Medicinal Cannabis on Driving and Cognitive Function: Real-World Evidence

Speaker: *Thomas Arkell, Centre for Human Psychopharmacology, Swinburne University of Technology*

43.3 Neural Mechanisms Underlying Cannabis-Induced Driving Impairment: The Impact of Tolerance and Individual Differences

Speaker: *Jan Ramaekers, Maastricht University*

43.4 Driver Monitoring Systems (DMS): Next Generation Methods to Manage Driver Impairment

Speaker: *Amie Hayley, Swinburne University of Technology*

Moderator: *Tory Spindle, Johns Hopkins University School of Medicine*

10:00 A.M. - 11:30 A.M.

SYMPOSIUM: A GENTLE INTRODUCTION TO DATA SCIENCE TOOLS FOR ADDICTION RESEARCH: USE CASES WITH EXAMPLES

Plaza Ballroom A

Chair: *Gabriel Odom, Florida International University*

Co-Chair: *Raymond Balise, University of Miami*

Discussant: *Daniel Feaster, University of Miami Miller School of Medicine*

Writing and publishing fully replicable scientific analyses is the goal for addiction research, but because of limitations in common software (e.g., copying and pasting numbers between SAS/Excel and Word) researchers do not have the easy-to-use tools to build fully reproducible workflows. In this workshop, participants will be shown how to use free (open source) software tools, including REDCap, R/RStudio, Quarto, and Zotero, to build a completely reproducible pipeline from data collection to manuscript publication. We will present general-purpose software add-ons (the Tidyverse, tidyREDCap, and rUM R Packages) in addition to other user-friendly software tools designed to aid addiction science researchers (R Packages including DOPE, ctn0094data, ctn0094DataExtra, and CTNnote). We will give examples of how we write our manuscripts: starting with data curation in REDCap; data wrangling, preprocessing, and engineering in RStudio with tidyREDCap and the Tidyverse; specific tasks related to addiction data with DOPE, ctn0094DataExtra, and CTNnote; managing our research bibliographies with Zotero, and creating publication-ready manuscripts with Quarto and rUM. Some of our examples will use the data sets from the Clinical Trials Network, namely CTN-0027, CTN-0030, and CTN-0051, as harmonized during the CTN-0094 project.

10:00 A.M. - 11:30 A.M.

SYMPOSIUM: UNIVERSAL PRECAUTIONS: CONSIDERATIONS WHEN CONDUCTING CLINICAL ADDICTION RESEARCH IN THE ACUTE CARE HOSPITAL

Plaza Ballroom D

Chair: *Michelle Lofwall, University of Kentucky, College of Medicine*

Co-Chair: *Laura Fanucchi, University of Kentucky, College of Medicine*

Hospitalizations for consequences of opioid use disorder (OUD), such as overdose and severe infections associated with injection drug use, are increasing with the opioid epidemic. Persons with OUD hospitalized with significant medical consequences are a unique population with complex needs both during and after hospitalization. Though there has been recent attention to the need to screen, diagnose, and initiate medications for OUD in hospitals, and also facilitate linkage to continued care in the community, there is a lack of evidence informing best practices, and major gaps in the care continuum post-discharge. Clinical research that involves persons with OUD and other substance use disorders in acute care hospitals, and that addresses the specific implementation issues in that setting is challenging but urgently needed. Investigators must navigate myriad factors that affect recruitment, enrollment, and adverse event monitoring, such as changes in clinical care and participant medical complexity. In addition, to be successful, research teams must frequently communicate with and coordinate among various multidisciplinary members of clinical teams and hospital administration. Furthermore, stigma related to persons with OUD and medications for OUD is common in general healthcare settings, and complicates interactions between researchers and the clinical team. During this session we will explore challenges, successes, and lessons learned in initiating, recruiting, enrolling, and randomizing medically complex, hospitalized patients with opioid use disorder through the lens of two ongoing clinical trials. We will also discuss a hybrid implementation-effectiveness trial evaluating the roll-out of an addiction consultation service in a large health care system.

45.1 Conducting a Randomized Controlled Trial in Hard to Control Hospital Settings: Lessons Learned From the B-OPAT Trial (Buprenorphine plus Outpatient Parenteral Antibiotic Therapy)

Speaker: *Laura Fanucchi, University of Kentucky, College of Medicine*

45.2 Inpatient and out of Treatment: The Ins and Outs of Addiction Research in Hospitals

Speaker: *Gavin Bart, University of Minnesota*

45.3 Understanding the Implementation and Effectiveness of Addiction Consult Services: Partnering With a Large Public Hospital System to Conduct a Pragmatic Trial of Addiction Consult Services in 6 Urban Hospitals

Speaker: *Jennifer McNeely, New York University Grossman School of Medicine*

12:00 P.M. - 1:00 P.M.

IN MEMORIAM MARY JEANNE KREEK

Plaza Ballroom BCEF (Plenary Ballroom)

Chair: *Eduardo Butelman, Mount Sinai School of Medicine*

Seminal work performed by Dr. Mary Jeanne Kreek and colleagues demonstrate the important contribution of dysregulation of the stress-responsive hypothalamic-pituitary-adrenal axis to the acquisition and persistence of drug-seeking behaviors. Dr. Ellen Unterwald will highlight Dr. Kreek's key findings from human and animal studies and present her own research on the role of stress-responsive mediators in cocaine seeking and relapse including analysis of sex-specific effects.

Dr. Kreek's clinical research on methadone efficacy and safety led to its FDA indication for the treatment of opioid use disorder and has resulted in life-saving and life-sustaining treatment for millions of people worldwide. Her work was also critical to identifying injection drug use as a risk factor for HIV, spurring public health approaches to drug use. Furthermore, her conceptual models of addictions entailing alterations in stress responsivity have influenced treatment approaches to opioid use disorder and alcohol use disorder and has supported increased interest in the kappa opioid system as a target for pharmacotherapy of alcohol and stimulant use disorders. Dr. Gavin Bart will use highlights from her career to illustrate her impact on contemporary clinical care and research in substance use disorders.

Dr. Brian Reed will share work on diverse kappa opioid receptor ligands in animal models, in an effort to identify candidates with reduced side effect profiles, including sedation and hallucinatory-like effects, which are undesirable characteristics of some of the earlier kappa opioid receptor agonists.

46.1 Stress-Responsive Genes and Their Role in Cocaine-Seeking

Speaker: *Ellen Unterwald, Lewis Katz School of Medicine at Temple University*

46.2 Kappa Opioid Receptor Ligands - Structure and Signaling Relationships

Speaker: *Brian Reed, Marymount Manhattan College*

46.3 The Clinical Impact of Dr. Mary Jeanne Kreek

Speaker: *Gavin Bart, University of Minnesota*