



NEWSLINE

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CPDD President's Column

Alan J. Budney
President, CPDD

Scientific Diversity and Addiction Research

Greetings everyone! Hopefully this column gets to you prior to our annual CPDD meeting in San Diego June 9-14, 2018.

CPDD has been my scientific home for the past 28 years. Before I begin, I just wanted to let you all know how appreciative and honored I am to have had this opportunity to serve the CPDD membership in the role of President over the last year. Although I learned quite a bit serving on our Board of Directors for 4 years, engaging with CPDD at the Executive Committee level has provided an increasing appreciation for those who organize, manage, and lead organizations such as ours. Perhaps even more compelling, I have had the opportunity to more clearly and comprehensively recognize and witness that *what we do matters!*

The discoveries, innovations, demonstrations, and observations made by our members in all facets of addiction science (i.e., development, maintenance, prevention, treatment, service delivery, prevalence, policy development and impact) have tremendous public health implications. This is of course obvious, however, serving in a leadership position for an organization like CPDD shines a bright light on the magnitude and reach of our work and its great potential to impact those at risk for and those who experience the consequences of problems related to substance use. Yet, CPDD does not only matter because of our members' scientific endeavors. CPDD also matters because we have committees and members who work hard to advocate for actions and policies that can facilitate the impact of our members' discoveries, and that will allow our members to access the resources and funds required to conduct the science necessary to solve the many enigmas, puzzles, and problems related to the understanding, prevention, and treatment of substance use problems. We have committees that educate the public and other scientists about our work and the crucial issues that must be addressed for us to keep making substantial progress. Moreover, CPDD matters because we invest in the development of junior scientists through travel awards, mentoring and grant writing experiences, opportunities to serve on CPDD Committees, and opportunities to present and network at our meetings. Last, I strongly believe that CPDD matters because we embrace and foster scientific diversity.

By scientific diversity, I am referring to the broad range of scientific research of our membership and the topics addressed at our annual conference. During this past year, we asked each member of our Board of Directors to provide a SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) of CPDD. By far, the most

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frequently mentioned strength was related to the diversity of our membership, i.e., areas of expertise, mix of industry, government and academia, demographics, international and national representatives, a focus on all drug classes. Note that our Board of Directors (BOD) is scientifically diverse by design. Although it is difficult to classify each of our BOD member's area of science into one category, an oversimplified version of our current BOD's research foci is as follows: 3 clinical trials, 2 health services and policy, 1 medicinal chemistry, 5 human behavioral pharmacology/treatment, 5 preclinical behavioral/clinical pharmacology/neuroscience, 1 human clinical neuroscience, and 2 employed by Industry and focused on regulatory affairs, abuse potential, and clinical epidemiology. This year's incoming BOD members are similarly diverse: epidemiology, human behavioral pharmacology, clinical trials, and medicinal chemistry. Moreover, our CPDD major award winners this year span the field: 2 medicinal chemists, human behavioral pharmacology/treatment, service and policy, preclinical behavioral/clinical pharmacology.

As stated by one BOD member, "*no other organization brings the depth and breadth of expertise to the significant public health issues of drug abuse*". This is who we are!

That said, as another member asserted, "*such diversity brings increased challenges to serve all of the membership - how diverse is too diverse?*" We face competition from more specialized scientific organizations for the valued time and resources of our members. The leadership of CPDD is always working on how to best address these challenges. For example, in the past few years, we have focused much effort toward maintaining the interest and participation of our preclinical researchers and trying to motivate the return of some that have not attended our meeting for a few years. We have increased travel award support and are always focused on finding ways to make the conference more affordable for younger members and those who may be struggling with resources. We engage smaller organizations of interest to our members to hold joint meetings with ours as a way to conserve resources while enhancing the opportunities for broad scientific representation. Last, we constantly assess and modify the program and its schedule in ways that we hope will serve our members best. Note that next year, we are going to experiment with a meeting schedule that is one-day shorter.

All that said, I encourage you to think hard about the value and importance of bringing all types of science to bear on what is our mutual goal – to better understand addiction so that we can prevent and reduce the harm it inflicts on our communities and the public health. I would assert that if we all take a little more time to better understand the research being done by our colleagues who work in different areas than our own, we would become more appreciative of the work they are doing. Moreover, I would argue that by so doing, you will increase the probability of enhancing your own research in ways you had not considered, thereby increasing the potential impact of your science within your own specialty area and on society. The concept of *translational* research (bench to bedside) has become well accepted perhaps to the point that it has lost some of its true meaning. The more recent focus on adding the concept of *reverse translation* (bedside to bench) to the discussion provides a more complete perspective on how scientific ideas are generated and how science must proceed to maximize its impact.

To embrace and take full advantage of this perspective, one needs to be aware and develop an understanding of what is known at levels of science in which you are not immersed. This is no easy task. There is good and bad science being conducted and published at each level, and if you are not an expert, how do you assess its quality? In addition, each area of science has specific language

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that you may not be familiar with, so understanding what is known in a foreign area is most difficult.

To me, this is the value of CPDD – we bring scientists working across diverse areas of addiction science to the same meeting, knowing that each of perspectives and its scientific value is necessary to effectively address this ubiquitous problem. CPDD offers the opportunity to interact and learn from those doing things much different than what each of us does in our own laboratory. As I said in my last column, CPDD has the best poster sessions of any conference I know. Attendance is great, senior and junior scientists present their work, food is served, and all are welcoming. This is your chance to ask questions – and they don't have to be about the specific procedures used in the study. Ask for a quick tutorial about the work, its implications, or about the paradigms used in that subfield? Let the poster presenter know what you do, and ask if they could explain how their work might be relevant to yours? There are no stupid questions!

What I am asking and encouraging is that, if you don't already, take some time at the conference to go to talks or posters that are in areas different than your own. Take the time to see what others are doing and be open to their approaches. Try to see its value to the field. If you come away feeling that you didn't get anything out of it, perhaps initiate a conversation with a colleague about what you saw and gain another perspective.

This year's CPDD Media Award winner, Maya Szalavitz, has written a book that highlights the diversity of addiction and the value of not becoming myopic in our approach to it. Her book reminds us to consider our own biases. Personal experience or direct observation (either in your laboratory or in real life) provides data to form hypotheses and theories to test, but it also can bias us to look in one direction. Substance addiction clearly has multiple causes and is a diverse animal that requires an understanding of many areas: e.g., behavior, brain, context, environment, insults, and genetics. As Ms. Szalavitz asserts, substance problems are learned and interact with a person's developmental history at the individual, social, and culture level. These problems *"play out in wildly varied ways to create a suite of problems that only look the same superficially."* Which brings us back to the importance of one of CPDD's core strengths – scientific diversity!

Thank you for "listening"! And thank you all for being active members of CPDD. We always welcome your ideas and feedback on how to make our organization more effective and valuable to its membership. So please don't hesitate to provide your thoughts or to serve on our Committees. As promised in my prior columns, I also encourage you to engage in advocacy and educational activities that can impact (a) the funding of and support for our science, regulations that impact our ability to do science, (b) public health perspectives and approaches, and at the bottom line, (c) the health of individuals in our society. Seek out opportunities to speak to community organizations and youth about your work and the importance of science to the public health in relation to addiction and other public health problems.

I will continue to serve CPDD this coming year as Past-President, so please contact me with any questions or suggestions! Here is a link to my email – don't hesitate to chime in! alan.j.budney@dartmouth.edu

Again, thank you all for the opportunity to serve CPDD!

I look forward to seeing you in San Diego.

Best,

Alan J. Budney, PhD
President, CPDD (2017-2018)

2018 ANNUAL MEETING HIGHLIGHTS

Richard Saitz, MD, MPH, FACP, DFASAM (SXIV, Tue, 3.15pm)

Common but under-addressed in studies

What is common but under-addressed in studies? The reality of polysubstance use. Because it is less messy, and often for good methodological reasons, studies address single substances. In so doing, investigators exclude people who use more than one substance or include them but treat other substances as nuisance variables to be controlled for. But in the real world people use more than one substance, and research should inform real world practice.

On Tuesday June 12, the translational symposium “**Polysubstance use is the norm: Time for research and practice to recognize and address it,**” provides a way forward. Professor Richard Saitz, Boston University, will set the stage for the symposium by examining polysubstance use in general and clinical populations, and the ability of ‘best practice’ tools to adequately (or not) characterize them in clinical research. Dr. Julie Marusich, Research Triangle Institute, will address the development of animal models to investigate the combined effects of delta-9-tetrahydrocannabinol and nicotine with a translational eye to developing studies in humans. Professor Melanie Wall, Columbia University Mailman School of Public Health and Department of Psychiatry at the medical center, will discuss methods for handling and understanding use of multiple substances in study design and in measuring outcomes relevant to polysubstance use. Finally, Dr. Hillary Kunins, Clinical Professor of Medicine and Assistant Commissioner at the New York City Department of Health and Mental Hygiene will address policy, its frequent focus on single substances and the potential to address multiple substances. Dr. Carlos Blanco, Director, Division of Epidemiology, Services and Prevention Research, National Institute on Drug Abuse, will discuss the current state of research on polysubstance use and future directions.

The symposium will open a new conversation on how to address polysubstance use successfully in research with a translational focus on impacting policy and practice.

Fred Nyberg, PhD (SXIX, Thu, 10am)

Global Recommendations for Opioid Treatment

Over the past decades, addiction to opioids has spread from street heroin addicts to include patients on chronic pain therapy. As a consequence, current guidelines and recommendations for the treatment of opioid dependence also need to consider this new group of individuals abusing prescription drugs. Improving the approach for opioid prescription at the various clinical practice can ensure patients to have access to safer, more effective chronic pain treatment while reducing the number of people who misuse, abuse, or overdose from these drugs.

In Europe treatment for opioid users is mostly conducted in outpatient settings, with a few exceptions, where inpatient centers are a major component of the drug treatment system. The range of options available in Europe for the treatment of opioid dependence is broad and increasingly differentiated, though it varies geographically in terms of accessibility and coverage. Drug-free and substitution treatment for opioid use are available in all EU Member States, Croatia and Norway.



**Richard Saitz, MD, MPH,
FACP, DFASAM**



Fred Nyberg, PhD

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In North America prescribing of opioids has increased dramatically and in parallel with this increases addiction, overdose, and associated deaths of these compounds have been seen. A similar situation occurs in Europe. According to the EMCDDA assessment of the drug-induced deaths, next to Estonia, Sweden is the country with the most drug-induced deaths per million populations in Europe. These include synthetic compounds as methadone, buprenorphine and fentanyl and an increase has been seen in both males and females. Moreover, it should be noted that a great part of the increase is seen in opioid deaths combined with benzodiazepines.

Although opioid addiction is effectively treated using a multidisciplinary approach including agonist opioid treatment and psychosocial intervention there are some difficulties. Misuse and diversion of pain medicines comprise a significant problem in Nordic countries associated with poor treatment compliance and increases in risk of blood-borne infections, crime, and mortality. To address this problem, changes in medicines used in treatment have already been implemented or under consideration.

The new guidelines for treatment of opioid addicts recommend the combination of buprenorphine-naloxone before mono-buprenorphine. Also, many people who inject drugs and patients in opioid substitute programs have the lethal viral disease hepatitis C (HCV). They are now getting access to Direct Acting Antivirals that can eradicate HCV.

At this symposium international well-known speakers will highlight current perspectives on Guidelines for opioid treatment as well as opioid overdoses and related deaths in Nordic countries but also in other countries within EU, North America and in East Asia.



Jay McLaughlin, PhD

Chris McCurdy, PhD and Jay McLaughlin, PhD***Kratom: Bitter narcotic or sweet medicine for pain and opioid addiction? (SXX, Thu, 10am)***

In August 2016, the DEA announcement to place Kratom and component alkaloids into Schedule I sparked an unprecedented public backlash. Although a drug of abuse concern for over a decade touted as a “legal high”, over 23,000 public comments on the DEA action demonstrate wide use of Kratom to control pain, opioid addiction and opioid withdrawal with limited liabilities. In lieu of a fuller scientific understanding of this natural product, the DEA suspended their intention to schedule Kratom, but retained the right to do so at any time. In February 2018, the FDA warned there was no evidence kratom was safe or effective for medical any use, and likened its chemical compounds to opioids.

This symposium will seek to fill the knowledge gap, bringing together expert scientists to review the current knowledge of the chemistry, pharmacology, toxicology, behavioral effects and epidemiology of Kratom and two alkaloid components, mitragynine and 7-hydroxymitragynine. Dr. McCurdy will review the history, chemistry and pharmacology of *Mitragyna speciosa* and will present evidence from rodent behavioral pharmacology studies of the effects of Kratom and key components in the treatment of pain and opioid withdrawal. Dr. Avery will detail what is known about the pharmacokinetics and toxicology of both the natural product and currently available commercial formulations. Dr. Boyer will review the

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epidemiology, use and putative abuse of Kratom in patient populations. Finally, a detailed review of the reinforcing and abuse-related effects of Kratom, mitragynine and 7-hydroxymitragynine and major components of the natural product will be offered with the self-administration studies of Dr. Hemby, and drug-discrimination studies of Dr. McMahon. Upon the conclusion of these presentations, a discussion section will evaluate both benefits and detriments attributed to this controversial natural product, with an attempt to forge consensus on future directions of research.

Rajita Sinha, PhD and Lorenzo Leggio, MD, MSc, PhD (SXVI, Wed, 9.15am)***Gut-brain axis in addictions: Peptides, lancet and bugs***

Growing evidence indicates an overlapping neurobiology of food intake and drugs of abuse. The bidirectional gut-brain connections have important functions in appetite and are involved in the mechanisms that lead to obesity, binge-eating and other eating disorders. In this symposium chaired by Drs. Lorenzo Leggio and Rajita Sinha, the speakers will present innovative preclinical, translational and clinical research findings that support the role of the gut-brain-axis in addictions.

Dr. Rajita Sinha will highlight adaptations in gut and stress hormones associated with increased food craving and intake and brain reward in response to highly palatable foods. Data showing altered gut hormones in individuals with substance abuse and their prediction of craving/relapse will also be presented.

Dr. Mitchell Roitman will follow up on the role of dopamine on reward processing in food- and drug-seeking behaviors. His rodent work demonstrates phasic, high concentration increases in dopamine evoked by food, and cues predicting food and cocaine infusions. He will discuss the role of neuropeptides in phasic dopamine signals under different physiological states, suggesting that hunger and satiety signals operate on circuitry critical for reinforcement and motivation.

Ms. Elise Orellana will show that, in obese rats, Roux-en-Y gastric bypass (RYGB) increases the rewarding effects of morphine and alcohol independently from postoperative weight loss; suggesting a biological cause. Furthermore, she will present data on differences in alcohol preference and sensitivity to ghrelin antagonism following RYGB versus sleeve gastrectomy.

Dr. Drew Kiraly will present data demonstrating a role for the gut microbiome as an important modulator of neuronal and behavioral plasticity in response to cocaine. His studies demonstrate that depletion of the gut microbiome with antibiotics leads to increased motivation to seek and insufflate cocaine. Additionally, he will present molecular analysis of the nucleus accumbens of microbiome-depleted rats which demonstrates alterations transcription factors and regulators of histone acetylation.

Dr. Andras Hajnal will serve as the symposium discussant.



Lorenzo Leggio, MD, MSc, PhD

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Cathy Cahill, PhD, and Sandra Comer, PhD

Sandra Comer, PhD and Cathy Cahill, PhD (SXV, Wed, 9.15am)

Fentanyl abuse: From medicinal chemistry to clinical management

Opioid use disorder (OUD) and its associated morbidity and mortality currently are at epidemic levels in the U.S. Beginning in the early 1990's, the increased incidence of OUD was mostly attributed to abuse of prescribed opioids, but an increase in heroin use has been observed in recent years. Despite concentrated efforts to address the problem, the rate of opioid overdose deaths is surging nationwide. This surge is due in part to the introduction of illicitly made fentanyl and its analogs. Despite the fact that fentanyl has been used in clinical settings for decades, its abuse liability and toxicity in humans, as well as the effectiveness of treatment medications in reducing illicit fentanyl use are not well characterized. In our joint INRC/CPDD symposium, Dr. Ivy Carroll will describe the ease of synthesizing fentanyl and its analogs relative to that of obtaining natural opioids and their analogs, as well as the relative in vitro and in vivo properties of fentanyl. Dr. James Woods will describe the behavioral pharmacology of fentanyl in preclinical models, as well as the ability of opioid antagonists and partial agonists to reduce its effects. Dr. Alex Walley will describe the observed course of fentanyl-related overdoses and the utility of naloxone to reverse them in real-world settings. And Dr. Kim Janda will describe a fentanyl vaccine as a potential novel therapeutic approach to treating fentanyl abuse. Drs. Sandra Comer and Cathy Cahill will serve as Chairs. This symposium should provide a broad overview of the chemistry and pharmacology of fentanyl, as well as the clinical characteristics of fentanyl overdose and opportunities for treatment.

For more information on the 80th CPDD Annual Meeting, please go to:

<http://cpdd.org/meetings/meetinginformation/>

DRUG AND ALCOHOL DEPENDENCE *CORNER*

Eric C. Strain, MD, Editor-in-Chief

Editor's choice articles

<https://www.journals.elsevier.com/drug-and-alcohol-dependence/editors-choice/editors-choice-dad>

Cost-effectiveness of a Hepatitis C Screening and Treatment Linkage Intervention in US Methadone Maintenance Treatment Programs

Bruce Schackman; Sarah Gutkind; Jake Morgan; Jared Leff; Czarina Behrends; Kevin Delucchi; Courtney McKnight; David Perlman; Carmen Masson; Benjamin Linas (Drug Alcohol Depend. 2018; 185: 411-420.)

Hepatitis C (HCV) is transmitted through injection drug use, and methadone maintenance treatment (MMT) patients are a high priority population for HCV screening. MMT programs rarely conduct HCV screening, however, and few evidence-based models for linking MMT patients to HCV care exist. We used data from a clinical trial conducted in MMT programs, and compared HCV screening and education only to adding a care coordination linkage intervention. Our computer simulation evaluated lifetime costs and benefits of the intervention and concluded that the value of HCV screening and education with care coordination for MMT patients represents an efficient use of resources.

A randomized, open label trial of methadone continuation versus forced withdrawal in a combined US prison and jail: findings at 12 months post-release

Lauren Brinkley-Rubinstein; Michelle McKenzie; Alexandra Macmadu; Sarah Larney; Nickolas Zaller; Emily Dauria; Josiah Rich (Drug Alcohol Depend. 2018; 184: 57-63.)

Methadone maintenance treatment (MMT) is an effective way to address opioid use; however, few jails and prisons provide MMT. We conducted an as-treated analysis including 179 participants—128 who were, and 51 who were not on MMT before release from the Rhode Island Department of Corrections. Results demonstrate that 12-months post-release individuals who received MMT: 1) were less likely to use heroin and inject drugs in the past 30 days, 2) reported fewer non-fatal overdoses, and 3) were more likely to be continuously in treatment. Findings indicate that providing access to MMT has a sustained impact on outcomes post-release.



On behalf of the **Australasian Professional Society on Alcohol and other Drugs**, we are pleased to invite you to our beautiful City of Sails and fun, Tāmaki Makaurau, for the APSAD Auckland 2018 Conference. The Conference will be held at the Pullman Hotel in the centre of Auckland from 4 to 7 November. It will showcase high quality and state of the art scientific research into treatment, prevention and policy while also providing an opportunity for practitioners to share their latest insights and lessons learnt. Wherever you have travelled from you will be warmly welcomed.

We will be sharing with you a uniquely Kiwi experience. Auckland is a diverse city full of activities and surrounded by breathtaking scenery! It's the sort of place where sleep gets in the way! Exploring beyond Auckland will also be highly rewarding. And for those with a few extra days before or after the conference opportunities are endless - explore subtropical Northland and the Bay of Islands; the Coromandel Peninsular; the magical Māori experience in Rotorua; our vibrant capital Wellington; or the magnificent views of the Southern Alps. There's plenty more!

On behalf of the APSAD Council, Organising Committee and the Scientific Advisory Committee we would be honoured to welcome you and your families/whanau to Auckland, New Zealand in 2018.

Dr. Susanna Galea-Singer and Dr. David Newcombe
2018 APSAD Conference Convenors