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# PROGRAM

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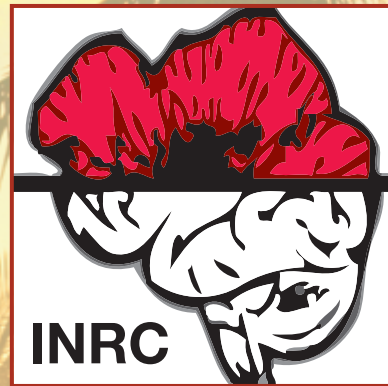
## **73rd Annual Scientific Meeting**



## **The College on Problems of Drug Dependence**

**June 18-23, 2011**

## **2011 Meeting**



## **International Narcotics Research Conference**

**June 21-25, 2011**

**The Westin Diplomat  
Hollywood, Florida**

### **CPDD Board of Directors**

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Lih-Chu Chiou, PhD (Taiwan)  
Mark Connor, PhD (Australia)  
Louis Gendron, PhD (Canada)  
Susan Ingram, PhD (USA)  
Shiro Kishioka, MD, PhD (Japan)  
Ian Kitchen, PhD (UK)  
Graeme Milligan, PhD (UK)  
Ingrid Nylander, PhD (Sweden)  
Ellen Unterwald, PhD (USA)

## PRE-MEETING SATELLITES

*NIDA: Fundamental Genetics in Drug Abuse and Addiction*  
Chaired by Minda R. Lynch and Joni L. Rutter

**Diplomat 1-2**  
June 17

*International Women's Fourth Meeting and Conference:  
Drug Use, Abuse, and Dependence in Young Women:  
Promising Interventions and Treatments*

**Great Hall 1-2**  
June 17

Chaired by Frances E. Ashe-Goins and Wendee Wechsberg

*The 15<sup>th</sup> Annual NIDA International Forum: Building  
International Collaborative Research on Drug Abuse*  
Chaired by Steven Gust

**Room 212-213**  
June 17 – 18

*Addiction Studies Program for Journalists (ASPJ)*  
(By Invitation Only)

**Diplomat 4-5**  
June 17 - 18

*The International Study Group Investigating  
Drugs as Reinforcers (ISGIDAR)*  
Chaired by S. Barak Caine

**Atlantic 3**  
June 18

*11<sup>th</sup> Annual Meeting Center for Substance Abuse  
Treatment (CSAT)*

**Atlantic 1**  
June 18

## CPDD/INRC REGISTRATION 3<sup>rd</sup> Floor Registration Conference Center

<b>Saturday, June 18</b>	<b>1:00 PM - 5:00 PM</b>
<b>Sunday, June 19</b>	<b>7:30 AM - 11:30 AM</b> <b>1:00 PM - 5:00 PM</b>
<b>Monday, June 20</b>	<b>7:30 AM - 11:30 AM</b> <b>1:00 PM - 5:00 PM</b>
<b>Tuesday, June 21</b>	<b>7:30 AM - 11:30 AM</b> <b>1:00 PM - 5:00 PM</b>
<b>Wednesday, June 22</b>	<b>8:00 AM - 11:30 AM</b> <b>2:00 PM - 6:00 PM</b>
<b>Thursday, June 23</b>	<b>7:30 AM - 11:30 AM</b> <b>2:30 PM - 5:00 PM</b>
<b>Friday, June 24</b>	<b>8:30 AM - 12:00 Noon</b>

## CPDD OPENING RECEPTION (Cash Bar) GREAT HALL 1-3

**Saturday, June 18**  
**7:00 PM - 9:00 PM**  
*(Pre-registrants can pick up  
badges only)*

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**Sunday, June 19, 2011**

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**CSAT Travel Awards Breakfast  
(By Invitation Only)**

**Room 214  
7:30 - 8:30 AM**

**Plenary Session**

**Atlantic Ballroom  
8:30 - 10:45 AM**

- 8:30 *Welcome, CPDD President Anna Rose Childress  
In Memoriam*
- 8:40 *Presentation of the Marian W. Fischman Award to Bertha K. Madras*  
Introduction by Mary Jeanne Kreek and Gregory Miller
- 8:45 *Marian W. Fischman Award Lecture: Public Health and Drug Policy-  
Challenges for Neuroscience*  
Bertha K. Madras, Harvard Medical School New England Regional  
Primate Research Center, Southborough, MA
- 9:30 *Presentation of the CPDD/NIDA Media Award to Justin Hunt*  
Introduction by Marc Kaufman
- 9:35 *Presentation of the J. Michael Morrison Award to Steven W. Gust*  
Introduction by Robert Balster
- 9:40 *Presentation of the Joseph Cochin Young Investigator Award to  
Thomas Prisinzano*  
Introduction by Kenner Rice
- 9:45 *(Posthumous) Presentation of the Mentorship Award to Stephen G. Holtzman*  
Introduction by Heather Kimmel
- 9:50 *Presentation of the Nathan B. Eddy Award to Michael J. Kuhar*  
Introduction by F. Ivy Carroll
- 9:55 *Nathan B. Eddy Award Lecture: Uncensored Reflections on a Research Career:  
MUs, DATs, CARTs and Beyond*  
Michael J. Kuhar, Yerkes National Primate Center of Emory University,  
Atlanta, GA

**Public Policy Forum**

**Atlantic Ballroom  
11:00 AM - 1:00 PM**

Chairs: Martin Y. Iguchi and William Dewey

- Update from the Hill and Friends of NIDA*  
William Dewey, Virginia Commonwealth University, Richmond, VA
- Punishment can work: A report on Hawaii's Project HOPE*  
Angela Hawken, Pepperdine University, Malibu, CA
- Creation of a substance use and abuse institute*  
Susan Weiss, David Shurtleff, NIDA, Bethesda, MD

*BADGES MUST BE WORN FOR ALL SESSIONS AND SOCIAL EVENTS*



## Late-Breaking Research News

**Regency 1**  
**1:00 – 2:00 PM**

Chair: Sandra Comer

- 1:00 *A randomized controlled trial of N-acetylcysteine in cannabis-dependent adolescents: Main findings*  
K.M. Gray, M.J. Carpenter, N.L. Baker, S.M. DeSantis, A.L. McRae-Clark, K.T. Brady, Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston, SC
- 1:05 *Drugs of abuse enhance HIV-1 infectivity in dendritic cells by suppressing miR-155 and 20a*  
J. Napuri, Z.M. Saiyed, N. Gandhi, A. Yndart, M. Agudelo, V.B. Pichili, T. Samikkannu, M.P.N Nair, Institute of NeuroImmune Pharmacology, Herbert Wertheim College of Medicine, Florida International University, Miami, FL
- 1:10 *Depot-naltrexone treatment modulates brain fMRI response to visual cues in heroin-dependent patients*  
D.D. Langleben, K. Ruparel, J.W. Loughhead, E. Busch, J. Cornish, A.R. Childress, C.P. O'Brien, University of Pennsylvania School of Medicine and the Philadelphia VA Medical Center, Philadelphia, PA
- 1:15 *Zolpidem enhances idling of the brain: Upregulation of resting state network activity*  
S.C. Licata, S.B. Lowen, L.D. Nickerson, G. H. Trksak, R.R MacLean, S.E. Lukas, Behavioral Psychopharmacology Research Laboratory and Brain Imaging Center, McLean Hospital/Harvard Medical School, Belmont, MA
- 1:20 *Cav1.2 L-type Ca<sup>2+</sup> channels mediate cocaine-induced plasticity in the nucleus accumbens, a long-term adaptation dependent on ventral tegmental area Cav1.3 channels*  
K. Schierberl, J. Hao, C. Inturrisi and A. Rajadhyaksha, Weill Cornell Graduated School of Biomedical Sciences, New York, NY
- 1:25 *Subregion specific striatal activity during reward and disappointment*  
R. Salas, P. Baldwin, P.R. Montague, R. De La Garza, II, Menninger Department of Psychiatry, Baylor College of Medicine, Houston, TX, Department of Neuroscience, Baylor College of Medicine, Houston, TX, Virginia Tech Carillion Institute, Roanoke, VA, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX

- 1:30 *Dopamine D1 receptor antagonism in the orbitofrontal cortex prevents drug context-induced cocaine-seeking behavior in rats*  
H.C. Lasseter, X. Xie, A.M. Wells, AR. Newsome, A. Reittinger, R.A. Fuchs, Department of Psychology, University of North Carolina at Chapel Hill, Chapel Hill, NC
- 1:35 *The effects of oral naltrexone on oral d-amphetamine and smoked cocaine in humans*  
P.A. Saccone, S.D. Comer, P. Roux, J.D. Jones, Z.D. Cooper, S.K. Vosburg, M.A. Sullivan, E. Rubin, J.M. Manubay, S. Mogali, M. Haney, R.W. Foltin, Department of Psychiatry, Division on Substance Abuse, Columbia University and NYSPI, New York, NY
- 1:40 *Age-specific risk of starting to engage in extra-medical use of opioid analgesic medicines: United States, 2004-2008*  
E.A. Meier, J.P. Troost, J.C. Anthony, Department of Epidemiology, Michigan State University, East Lansing, MI
- 1:45 *High prevalence of prescription opioid use preceding heroin use in three west coast cities*  
R.A. Pollini, C. Banta-Green, L. Jenkins, E. Teshale, R. Garfein, School of Medicine, University of California San Diego, La Jolla, CA, Alcohol and Drug Abuse Institute, University of Washington, Seattle, WA, Multnomah County Health Department, Portland, OR, Centers for Disease Control and Prevention, Atlanta, GA
- 1:50 *Menthol preference among smokers: Association with TRPA1 variants*  
G.R. Uhl, D. Walther, C. Johnson, F.M. Behm, J.E. Rose, Molecular Neurobiology, NIH IRP (NIDA) Baltimore MD, Center for Nicotine and Smoking Cessation Research, Duke University, Durham NC
- 1:55 *ADHD symptoms predict affective functioning in smokers with and without PTSD*  
J.T. Mitchell, E.E. Van Voorhees, F.J. McClernon, S.H. Kollins, P.S. Calhoun, J.C. Beckham, Department of Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, NC, Veterans Affairs Medical Center, Durham, NC, Mid-Atlantic Mental Illness Research Education and Clinical Center, Durham, NC, VA Center for Health Services Research in Primary Care, Durham, NC

## **Symposium I**

**Regency 1  
2:15 - 4:15 PM**

### **PRENATAL COCAINE EXPOSURE IN ANIMALS AND HUMANS: SEX DIFFERENCES ACROSS THE LIFESPAN**

Chairs: Cora Lee Wetherington and Samia D. Noursi

- 2:15 *Differential effects of prenatal cocaine and environment on reward in male and female adolescent rats*  
Diana Dow-Edwards, State University of New York, Downstate Medical Center, Brooklyn, NY
- 2:45 *Long-term behavioral and neuropharmacological consequences to prenatal cocaine exposure in male and female rhesus monkeys*  
Michael A. Nader, Wake Forest University School of Medicine, Winston-Salem, NC
- 3:15 *Prenatal cocaine exposure: Multi-domain outcomes in inner-city male and female adolescents*  
Emmalee S. Bandstra, University of Miami Miller School of Medicine, Miami, FL
- 3:45 *Prenatal cocaine exposure, early adversity, and stress reactivity: Sex differences*  
Linda C. Mayes, Yale University School of Medicine, New Haven, CT

## **Oral Communications 1**

**Regency 3  
2:15 - 4:15 PM**

### **WEEDING OUT THE ROOT OF THE PROBLEM: THC AND CANNABINOIDS**

Chairs: Lisa M. Schrott and Erin A. McClure

- 2:15 *Upregulation of endocannabinoids attenuates the pro-emetic effects of opiates*  
L. M. Schrott, G. S. Johnson, A. A. Krentzel, I. A. Marin, A. L. Ross, L. M. Franklin,  
Pharmacology, LSUHSC-S, Shreveport, LA
- 2:30 *Increased sensitivity of female C57Bl6 mice to paclitaxel-induced neuropathic pain and place-conditioning*  
H. Neelakantan, M. D. Ramirez, S. J. Ward, E. A. Walker, Pharmaceutical Sciences, Temple University, Philadelphia, PA
- 2:45 *THC effects on locomotor activity and elevated plus maze behavior during dosing and during spontaneous withdrawal in adolescent rats*  
L. C. Harte-Hargrove, D. Dow-Edwards, SUNY Downstate, New York, NY
- 3:00 *Effects of the cannabinoid JWH-018, a primary component of K2/Spice, in rhesus monkeys*  
L. R. McMahon<sup>1</sup>, D. R. Schulze<sup>1</sup>, B. C. Ginsburg<sup>2</sup>, <sup>1</sup>Pharmacology, University of Texas Health Science Center, San Antonio, TX, <sup>2</sup>Psychiatry, University of Texas Health Science Center, San Antonio, TX
- 3:15 *Characterizing smoking topography of cannabis in heavy users*  
E. A. McClure, M. L. Stitzer, R. Vandrey, Psychiatry and Behavioral Sciences, Johns Hopkins University, Baltimore, MD
- 3:30 *GABA modulation of the discriminative-stimulus effects of THC in humans*  
J. Lile, T. Kelly, L. Hays, University of Kentucky College of Medicine, Lexington, KY
- 3:45 *Galantamine's effects on cognitive function in marijuana users*  
D. E. Sugarman<sup>2,1</sup>, J. Poling<sup>1,2</sup>, M. Sofuoglu<sup>1,2</sup>, <sup>1</sup>Psychiatry, Yale University, New Haven, CT, <sup>2</sup>VA Connecticut Healthcare System, West Haven, CT

- 4:00 *THC impairs, and amphetamine facilitates, memory encoding preferentially for emotionally salient stimuli*  
M. E. Ballard<sup>1</sup>, D. A. Gallo<sup>2</sup>, H. de Wit<sup>1</sup>, <sup>1</sup>Psychiatry and Behavioral Neuroscience, University of Chicago, Chicago, IL, <sup>2</sup>Psychology, University of Chicago, Chicago, IL

### Oral Communications 2

**Diplomat 1-2**  
**2:15 - 4:15 PM**

#### GENETICS: CODE READ

Chairs: Gregory M. Miller and Amy Janes

- 2:15 *GABRA2 genotype influences risk for substance abuse via effects in the nucleus accumbens*  
M. Heitzeg, B. Weiland, S. Villafuerte, W. Yau, P. Samudra, M. Burmeister, J. Zubieta, R. Zucker, The University of Michigan, Ann Arbor, MI
- 2:30 *Maternal cannabis dependence and offspring early substance involvement: Results from Australian children of twins*  
M. Waldron<sup>1,2</sup>, A. C. Heath<sup>2</sup>, N. G. Martin<sup>3</sup>, <sup>1</sup>Indiana University, Bloomington, IN, <sup>2</sup>Washington University School of Medicine, St. Louis, MO, <sup>3</sup>Queensland Institute of Medical Research, Brisbane, QLD, Australia
- 2:45 *Association between CHRNA5 genetic variation and brain reactivity to smoking images in women smokers*  
A. Janes<sup>1</sup>, J. W. Smoller<sup>2</sup>, S. P. David<sup>3</sup>, B. D. Frederick<sup>1</sup>, S. Haddad<sup>2</sup>, A. Basu<sup>2</sup>, M. Fava<sup>2</sup>, A. E. Evins<sup>2</sup>, M. J. Kaufman<sup>1</sup>, <sup>1</sup>McLean Hospital/ Harvard Medical School, Belmont, MA, <sup>2</sup>Massachusetts General Hospital, Boston, MA, <sup>3</sup>Stanford School of Medicine, Stanford, CA
- 3:00 *Investigating a genetic marker of vulnerability for stimulant abuse*  
S. C. Sigmon, S. T. Higgins, S. H. Heil, K. A. Saulsgiver, Psychiatry, University of Vermont, Burlington, VT
- 3:15 *Effects of methamphetamine abuse and serotonin transporter gene variants on aggression and emotion-processing neurocircuitry*  
D. E. Payer<sup>1</sup>, E. L. Nurmi<sup>1</sup>, S. A. Wilson<sup>1</sup>, J. T. McCracken<sup>1</sup>, E. D. London<sup>1,2,3</sup>, <sup>1</sup>Psychiatry and Biobehavioral Sciences, UCLA, Los Angeles, CA, <sup>2</sup>Molecular and Medical Pharmacology, UCLA, Los Angeles, CA, <sup>3</sup>Brain Research Institute, UCLA, Los Angeles, CA
- 3:30 *Hypermethylation of specific CpG dinucleotides in the Oprm1 gene promoter region in rats exposed to heroin*  
D. A. Nielsen<sup>1</sup>, L. Maili<sup>2</sup>, M. Levy<sup>4</sup>, M. Huang<sup>1</sup>, S. Hamon<sup>3</sup>, F. Leri<sup>4</sup>, <sup>1</sup>Menninger Department of Psychiatry and Behavioral Sciences, Baylor College of Medicine, Houston, TX, <sup>2</sup>Psychiatry and Behavioral Sciences, University of Texas Health Science Center at Houston, Houston, TX, <sup>3</sup>Laboratory of Statistical Genetics, The Rockefeller University, New York, NY, <sup>4</sup>Psychology, University of Guelph, Guelph, ON, Canada
- 3:45 *Advancing the rhesus monkey model for opioid research: Discovery of a novel nonsynonymous variant in the kappa opioid receptor gene*  
G. M. Miller, B. K. Madras, E. J. Vallender, New England Primate Research Center, Harvard Medical School, Southborough, MA
- 4:00 *How susceptible is the alcoholism protection effect of ALDH2 exon 12 SNP to epidemiologic variations?*  
R. K. Price<sup>1</sup>, G. Widner<sup>1</sup>, S. Balan<sup>1</sup>, E. L. Spitznagel<sup>2</sup>, <sup>1</sup>Department of Psychiatry, Washington University School of Medicine, St. Louis, MO, <sup>2</sup>Mathematics, Washington University, Saint Louis, MO



## **Oral Communications 3**

**Diplomat 4-5  
2:15 - 4:15 PM**

### **WHAT'S UP WITH DOWNERS AND INHALANTS?**

Chairs: Scott Bowen and Bradford D. Fischer

- 2:15 *Physical dependence following acute benzodiazepine administration: Role of  $\alpha 1$  GABA<sub>A</sub> receptors*  
B. D. Fischer<sup>1</sup>, L. P. Teixeira<sup>1</sup>, O. Namjoshi<sup>2</sup>, M. L. Van Linn<sup>2</sup>, Z. Wang<sup>2</sup>, J. M. Cook<sup>2</sup>, J. K. Rowlett<sup>1</sup>, <sup>1</sup>Harvard Medical School/NEPRC, Southborough, MA, <sup>2</sup>University of Wisconsin, Milwaukee, WI
- 2:30 *Receptor sub-type selectivity affects subjective and cognitive effects of GABA modulators in humans: A comparison of lorazepam and a novel GABA-A $\alpha 2$ /GABA-A $\alpha 3$  selective modulator*  
K. A. Schoedel<sup>1</sup>, J. Frey<sup>2</sup>, B. Chakraborty<sup>1</sup>, M. Romach<sup>1</sup>, E. Sellers<sup>1,3</sup>, <sup>1</sup>Kendle Early Stage - Toronto, Toronto, ON, Canada, <sup>2</sup>AstraZeneca, Wilmington, DE, <sup>3</sup>DL Global Partners Inc, Toronto, ON, Canada
- 2:45 *GABA-B receptor positive modulators: Differential enhancement of the discriminative stimulus effects of baclofen and gamma-hydroxybutyrate*  
W. Koek<sup>1,2</sup>, C. P. France<sup>2,1</sup>, K. Cheng<sup>3</sup>, K. C. Rice<sup>3</sup>, <sup>1</sup>Psychiatry, UTHSCSA, San Antonio, TX, <sup>2</sup>Pharmacology, UTHSCSA, San Antonio, TX, <sup>3</sup>Chemical Biology Research Branch, NIDA & NIAAA, Bethesda, MD
- 3:00 *GHB in adolescent rat inhibits contextual fear conditioning*  
R. Sircar<sup>1,2</sup>, K. Ishiwari<sup>1</sup>, <sup>1</sup>Neuroscience, The Feinstein Institute for Medical Research, Manhasset, NY, <sup>2</sup>Psychiatry & Behavioral Sciences, Albert Einstein College of Medicine, Bronx, NY
- 3:15 *Twelve months of nightly zolpidem does not produce withdrawal symptoms on drug discontinuation: A prospective placebo-controlled study*  
T. Roehrs<sup>1,2</sup>, S. Randall<sup>1</sup>, E. Harris<sup>1</sup>, R. Maan<sup>1</sup>, T. Roth<sup>1,2</sup>, <sup>1</sup>Henry Ford Health System, Detroit, MI, <sup>2</sup>Psychiatry & Behavioral Neuroscience, Wayne State University School of Medicine, Detroit, MI
- 3:30 *Assessing the discriminative stimulus effects of Soma*  
T. Carbonaro, M. J. Forster, M. B. Gatch, Pharmacology & Neuroscience, UNT Health Science Center, Fort Worth, TX
- 3:45 *Development of tolerance in mice during carisoprodol treatment*  
J. D. Nguyen, T. Carbonaro, M. B. Gatch, T. R. Birchfield, M. J. Forster, Pharmacology & Neuroscience, UNT Health Science Center, Fort Worth, TX
- 4:00 *Adenylyl cyclases types 1 and 8 alter behavioral responses to toluene*  
S. Bowen<sup>3,4</sup>, L. Susick<sup>2</sup>, J. Lowing<sup>2</sup>, A. Conti<sup>1,2</sup>, <sup>1</sup>Research & Development Service, John D. Dingell VA Medical Center, Detroit, MI, <sup>2</sup>Neurosurgery, Wayne State University, Detroit, MI, <sup>3</sup>Psychology, Wayne State University, Detroit, MI, <sup>4</sup>Obstetrics & Gynecology, Wayne State University, Detroit, MI

*BADGES MUST BE WORN FOR ALL SESSIONS AND SOCIAL EVENTS*

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**Sunday, June 19, 2011**

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**Primm-Singleton Travel Awardees Meeting**

**Room 320  
5:30 - 7:30 PM**

**Workshop I**

**Regency 1  
8:00 - 10:00 PM**

**17TH ANNUAL CONTINGENCY MANAGEMENT WORKING GROUP**

Chairs: Kelly E. Dunn and Kathryn A. Saulsgiver

**Workshop II**

**Regency 3  
8:00 - 10:00 PM**

**MEDIA TRAINING**

Chairs: Kathleen Brady and Martin Y. Iguchi

**Workshop III**

**Diplomat 1-2  
8:00 - 10:00 PM**

**ASSESSING AND MONITORING RISK FOR PRESCRIPTION OPIOID  
ABUSE ACROSS DIVERSE POPULATIONS**

Chairs: Andrea Barthwell and Lynn Webster

*Managing and identifying risks in patients treated for drug addiction*

Andrea Barthwell, EMGlobal LLC, Arlington, VA

*Developing surveys to determine the rates of prescription opioid misuse, abuse and pseudo-addiction in chronic pain patients*

Beatrice Setnik, King Pharmaceuticals, Inc., Cary, NC

*Assessing and mitigating risk in pain patients*

Lynn Webster, Lifetree Clinical Research and Pain Clinics, Salt Lake City, UT

**Workshop IV**

**Diplomat 4-5  
8:00 - 10:00 PM**

**FRONTIERS IN SYSTEMS MODELING:  
BRIDGING SCIENCE AND POLICY**

Chairs: Alison Ritter and Georgiy Bobashev

*Primary prevention of HCV among injecting drug users and population - impact and role of opiate substitution treatment, needle and syringe distribution, and HCV antiviral treatment*

Matthew Hickman, University of Bristol, Bristol, United Kingdom

*Longitudinal estimates from cross-sectional data: The use of agent-based models to estimate HIV risk of drug using and sexual behaviour*

Georgiy Bobashev, RTI International, Research Triangle Park, NC

*An ontology-based social model of recreational poly-drug use*

Pascal Perez, University of Wollongong, NSW, NSW, Australia

*Discussant*

Allison Ritter, University of New South Wales, Randwick, NSW, Australia

## Poster Session I

(Breakfast)

Odd-numbered posters manned first hour;

Even-numbered, second hour

Great Hall 3-6

8:00 - 10:00 AM

Set-up time begins Sunday 12:00 NOON

Must be removed by Monday 12:00 NOON

### HIV I

- 1 *Methadone with or without counseling: Impact on HIV-risk behaviors*  
S. M. Kelly<sup>1</sup>, J. H. Jaffe<sup>1,2</sup>, K. E. O'Grady<sup>3</sup>, D. Gandhi<sup>2</sup>, R. P. Schwartz<sup>1</sup>, <sup>1</sup>Friends Research Institute, Baltimore, MD, <sup>2</sup>University of Maryland, School of Medicine, Baltimore, MD, <sup>3</sup>University of Maryland, College Park, College Park, MD
- 2 *HIV sero-status, knowledge, and injection behaviors among methadone maintenance treatment clients in urban vs. rural settings of Kunming, Yunnan*  
Y. Chang<sup>1</sup>, J. Hsieh<sup>1</sup>, J. Li<sup>2</sup>, Y. Hser<sup>1</sup>, R. Rawson<sup>1</sup>, <sup>1</sup>UCLA, Los Angeles, CA, <sup>2</sup>Yun Nan Institute on Drug Abuse, Kunming, China
- 3 *HIV risk and treatment among opiate injectors*  
K. F. Corsi, S. Min, M. S. Royer, R. E. Booth, Psychiatry, University of Colorado Denver, Denver, CO
- 4 *Naltrexone+behavioral intervention compared to usual care: Drug use and HIV risk outcomes in men with drug-free female partners*  
D. Otiazhvili<sup>1</sup>, I. Kirtadze<sup>1</sup>, K. E. O'Grady<sup>2</sup>, H. E. Jones<sup>3</sup>, <sup>1</sup>Addiction Research Center, Union Alternative Georgia, Tbilisi, Georgia, <sup>2</sup>Department of Psychology, University of Maryland, College Park, MD, <sup>3</sup>Research Triangle Institute International, Research Triangle Park, NC
- 5 *High risk HIV behaviors in prescription opioid, iv heroin, and non-iv heroin users*  
B. Thornton, M. Hillhouse, S. Schroeder, W. Ling, ULCA Integrated Substance Abuse Programs, Los Angeles, CA
- 6 *Unhealthy alcohol and illicit drug use are associated with decreased quality of HIV care*  
P. T. Korthuis<sup>1</sup>, K. L. Kraemer<sup>2</sup>, K. A. McGinnis<sup>2</sup>, M. Skanderson<sup>2</sup>, A. C. Justice<sup>3</sup>, A. J. Gordon<sup>2</sup>, D. A. Fiellin<sup>3</sup>, <sup>1</sup>Oregon Health & Science University, Portland, OR, <sup>2</sup>University Pittsburgh, Pittsburgh, PA, <sup>3</sup>Yale University, New Haven, CT
- 7 *A randomized trial evaluating the effectiveness of a hepatitis care coordination model in methadone maintenance treatment*  
C. L. Masson<sup>1</sup>, K. L. Delucchi<sup>1</sup>, D. C. Perlman<sup>2</sup>, C. McKnight<sup>2</sup>, J. Hall<sup>1</sup>, C. Young<sup>2</sup>, J. Ferrara<sup>1</sup>, A. Jordan<sup>2</sup>, M. Khalili<sup>1</sup>, A. Min<sup>2</sup>, S. Dominy<sup>1</sup>, R. Seewald<sup>2</sup>, H. Bodenheimer<sup>2</sup>, D. C. Des Jarlais<sup>2</sup>, J. L. Sorensen<sup>1</sup>, <sup>1</sup>University of California, San Francisco, San Francisco, CA, <sup>2</sup>Beth Israel Medical Center, New York, NY
- 8 *Hepatitis and HIV knowledge in methadone patients*  
S. E. Larios<sup>1</sup>, C. L. Masson<sup>1</sup>, M. Khalili<sup>1</sup>, J. Hall<sup>1</sup>, A. Jordan<sup>2</sup>, J. L. Sorensen<sup>1</sup>, D. Perlman<sup>2</sup>, <sup>1</sup>Psychiatry, University of California San Francisco, San Francisco, CA, <sup>2</sup>Beth Israel Medical Center, New York, NY
- 9 *HCV-therapy in opioid-dependent, substituted patients in Germany*  
S. M. Apelt, Certum Consulting Scientific Research, Oberbergkirchen, Germany

- 10 *Socially-rooted resilience among IDUs: The protective factors that may help long-term IDUs remain HIV uninfected and help other injectors stay safe*  
S. Sirikantraporn, P. Mateu-Gelabert, S. R. Friedman, M. Sandoval, National Development and Research Institutes, Inc., New York, NY
- 11 *Intranasal drug use as a component in “combined” prevention of hepatitis C virus transmission among injecting drug users: New York City, 2005 – 2010*  
D. C. Des Jarlais<sup>1</sup>, K. Arasteh<sup>1</sup>, H. Hagan<sup>3</sup>, C. McKnight<sup>1</sup>, S. Semaan<sup>2</sup>, D. Perlman<sup>1</sup>, <sup>1</sup>Baron Edmond de Rothschild Chemical Dependency Institute, Beth Israel Medical Center, New York, NY, <sup>2</sup>National Center for HIV/AIDS, STD & TB Prevention, Centers for Disease Control and Prevention, Atlanta, GA, <sup>3</sup>School of Nursing, New York University, New York, NY
- 12 *Treatment engagement and re-engagement strategies for syringe exchangers*  
M. S. Kidorf, V. King, J. Peirce, R. Brooner, Psychiatry, Johns Hopkins, Baltimore, MD
- 13 *The effect of traditional masculinity in response to an HIV risk reduction intervention for substance-abusing men*  
J. Wilson, Psychology, University of Cincinnati, Cincinnati, OH
- 14 *Cultural consideration in treating ethnic minority MSM*  
S. Larkins<sup>1</sup>, B. Rutkowski<sup>1</sup>, R. Rawson<sup>1</sup>, T. Freese<sup>1</sup>, T. Durham<sup>2</sup>, A. Skinstad<sup>3</sup>, J. Aiello<sup>4</sup>, E. Talboy<sup>2</sup>, <sup>1</sup>Integrated Substance Abuse Programs, University of California, Los Angeles, Los Angeles, CA, <sup>2</sup>Danya Institute, Silver Spring, MD, <sup>3</sup>University of Iowa, Iowa City, IA, <sup>4</sup>Ireta, Pittsburgh, PA
- 15 *Culturally tailoring the Real Men Are Safe HIV prevention intervention*  
M. A. Hatch-Maillette<sup>1</sup>, D. A. Calsyn<sup>1</sup>, A. K. Burlew<sup>2</sup>, J. Wilson<sup>2</sup>, B. Beadnell<sup>1</sup>, L. Wright<sup>1</sup>, <sup>1</sup>University of Washington, Seattle, WA, <sup>2</sup>University of Cincinnati, Cincinnati, OH
- 16 *HIV risk behaviors among gay and bisexual men over a weekend vacation*  
M. Fisher<sup>1</sup>, R. Ramchand<sup>1</sup>, M. Y. Iguchi<sup>3,2</sup>, K. Becker<sup>2</sup>, <sup>1</sup>RAND, Arlington, VA, <sup>2</sup>RAND, Santa Monica, CA, <sup>3</sup>UCLA, Los Angeles, CA
- 17 *Interconnection among substance use, depression and HIV risk behavior in substance abuse treatment patients*  
S. Tross<sup>1</sup>, D. Feaster<sup>2</sup>, S. Erickson<sup>3</sup>, R. Duan<sup>2</sup>, Z. Gomez<sup>2</sup>, T. Kyle<sup>2</sup>, K. Malotte<sup>4</sup>, E. Nunes<sup>1</sup>, L. Metsch<sup>2</sup>, <sup>1</sup>New York State Psychiatric Institute, New York, NY, <sup>2</sup>University of Miami Miller School of Medicine, Miami, FL, <sup>3</sup>University of California—Los Angeles, Los Angeles, CA, <sup>4</sup>California State University—Long Beach, Long Beach, CA
- 18 *Predictors of HIV status among low-income MSMW in three cities*  
A. J. Ober<sup>1</sup>, M. Y. Iguchi<sup>2,3</sup>, S. Berry<sup>3</sup>, T. Fain<sup>3</sup>, P. M. Gorbach<sup>4</sup>, R. Heimer<sup>5</sup>, L. J. Oullet<sup>6</sup>, S. Shoptaw<sup>7</sup>, W. A. Zule<sup>8</sup>, <sup>1</sup>Integrated Substance Abuse Programs, UCLA David Geffen School of Medicine, Los Angeles, CA, <sup>2</sup>Community Health Sciences, UCLA School of Public Health, Los Angeles, CA, <sup>3</sup>RAND Corporation, Santa Monica, CA, <sup>4</sup>Epidemiology, UCLA School of Public Health, Los Angeles, CA, <sup>5</sup>Yale University School of Public Health, New Haven, CT, <sup>6</sup>University of Illinois Chicago School of Public Health, Chicago, IL, <sup>7</sup>Family Medicine, UCLA David Geffen School of Medicine, Los Angeles, CA, <sup>8</sup>Research Triangle Institute, Raleigh-Durham, NC
- 19 *Demographic and sex-related factors associated with 4 drug use behaviors in women at risk for HIV*  
D. L. Haller<sup>1</sup>, L. Leonard<sup>2</sup>, L. O'Donnell<sup>3</sup>, <sup>1</sup>St. Luke's-Roosevelt, New York, NY, <sup>2</sup>Johns Hopkins, Baltimore, MD, <sup>3</sup>EDC, Newton, MA

- 20 *Variability in self-esteem as a predictor of risky sexual attitudes in a community sample of female African American drug users*  
J. L. Duvall<sup>1</sup>, C. B. Oser<sup>2</sup>, M. Staton-Tindall<sup>3</sup>, J. R. Havens<sup>1</sup>, C. G. Leukefeld<sup>1</sup>, <sup>1</sup>Behavioral Science, University of Kentucky, Lexington, KY, <sup>2</sup>Sociology, University of Kentucky, Lexington, KY, <sup>3</sup>Social Work, University of Kentucky, Lexington, KY
- 21 *Apathy as a moderator of the association between social disorganization and sex with men involved in drug dealing*  
L. J. Floyd, Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

### POLYDRUG I

- 22 *Evidence of preference for higher sucrose solutions in psychoactive substance subjects*  
A. V. Cardoso<sup>1</sup>, M. C. Rosa<sup>1,2</sup>, J. P. Costa<sup>1</sup>, D. V. Pires<sup>1</sup>, M. B. Campos<sup>1</sup>, C. M. Gomes<sup>1</sup>, S. B. Slavutzky<sup>2</sup>, F. H. Kessler<sup>2</sup>, E. F. Ferreira<sup>1</sup>, F. Pechansky<sup>2</sup>, <sup>1</sup>Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, <sup>2</sup>Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
- 23 *Impulsivity analysis between substance dependence and sugar dependence subjects*  
N. C. Marchi<sup>1,3</sup>, M. C. Rosa<sup>1,2</sup>, L. Von Diemen<sup>1</sup>, T. M. Bastos<sup>1</sup>, M. D. Borges<sup>1,3</sup>, F. A. Gonçalves<sup>1</sup>, C. M. Gomes<sup>2</sup>, S. M. Slavutzky<sup>1</sup>, F. H. Kessler<sup>1</sup>, E. F. Ferreira<sup>2</sup>, F. Pechansky<sup>1</sup>, <sup>1</sup>Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, <sup>2</sup>Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, <sup>3</sup>Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre, Brazil
- 24 *Negative reinforcement learning is impaired in adults with substance dependence*  
L. L. Thompson<sup>1</sup>, E. Claus<sup>2</sup>, S. Mikulich-Gilbertson<sup>1</sup>, M. Banich<sup>3</sup>, T. Crowley<sup>1</sup>, J. Tanabe<sup>1</sup>, <sup>1</sup>UCD School of Medicine, Aurora, CO, <sup>2</sup>Mind Research Network, Albuquerque, NM, <sup>3</sup>University of CO, Boulder, CO
- 25 *Exercise and nutrition profiles in patients with substance use disorders*  
P. Dillon, D. Wilson, D. Svikis, Virginia Commonwealth University, Richmond, VA
- 26 *Eating behaviors and relapse among physicians recovering from substance use disorders*  
M. Ruffalo, L. J. Merlo, Psychiatry, University of Florida, Gainesville, FL
- 27 *Factor structure of the Spanish version of the CSSA in primary cocaine-dependent patients and methadone-maintained cocaine-dependent patients*  
J. C. Pérez de los Cobos<sup>1</sup>, J. Trujols<sup>1</sup>, N. Siñol<sup>1</sup>, L. Vasconcelos<sup>2</sup>, P. Fernandez<sup>1</sup>, A. Larrabeiti<sup>1</sup>, <sup>1</sup>Addictive Behaviors Unit, Hospital de la Santa Creu i Sant Pau, Barcelona, Spain, <sup>2</sup>Fundación Hospital Sant Pere Claver, Barcelona, Spain
- 28 *Can clinical trial adverse events predict pharmacological response?*  
M. K. Romach, N. Levy-Cooperman, E. M. Sellers, K. A. Schoedel, Kendle Early Stage - Toronto, Toronto, ON, Canada
- 29 *Willingness to quit smoking among substance abuse recovering patients*  
L. Webb, S. Kedia, K. Ward, G. Relyea, Social and Behavioral Sciences, University of Memphis, Memphis, TN
- 30 *Poly-drug and marijuana use among adults who use methamphetamine*  
A. Raihan, K. Lovinger, D. Christou, P. Sheaff, D. Herbeck, M. Brecht, Integrated Substance Abuse Programs, UCLA, Los Angeles, CA
- 31 *Ask your mother: Parental reports on ADHD, life stress and family history of alcohol abuse*  
T. Moore<sup>1</sup>, L. Keyser-Marcus<sup>2</sup>, D. Svikis<sup>1</sup>, <sup>1</sup>Psychology, VCU, Richmond, VA, <sup>2</sup>Psychiatry, Virginia Commonwealth University, Richmond, VA



- 32 *Children of treated substance-abusing mothers*  
Y. Hser, E. Evans, D. Huang, N. Messina, UCLA Integrated Substance Abuse Programs, Los Angeles, CA
- 33 *Children's exposure to violence in substance-abusing homes*  
K. Klostermann<sup>1,2</sup>, M. Kelley<sup>2</sup>, L. Pusateri<sup>1,2</sup>, T. Mignone<sup>3</sup>, <sup>1</sup>Old Dominion University Research Foundation, Old Dominion University, Norfolk, VA, <sup>2</sup>Department of Psychology, Old Dominion University, Norfolk, VA, <sup>3</sup>Western York Health Care System, Buffalo, NY
- 34 *Drug use relapse after first treatment among emerging adults*  
E. Evans, L. Li, M. Brecht, Y. Hser, Integrated Substance Abuse Programs, UCLA, Los Angeles, CA
- 35 *Fear of being killed by an intimate partner: The impact of substance abuse*  
A. Tuller, M. Lin, R. Sage, S. Griffing, L. Madry, Urban Resource Institute, Brooklyn, NY
- 36 *Drug use among poor African-American veterans: A secondary analysis of data from the National Survey on Drug Use and Health*  
P. Vazan, A. Golub, Institute for Special Populations Research, NDRI, New York, NY
- 37 *Sociodemographic and clinical predictors of treatment retention and substance use outcomes*  
R. Walker, T. Carmody, M. H. Trivedi, University of Texas Southwestern Medical Center, Dallas, TX
- 38 *Cognitive behavioral therapy and substance-using minorities: A meta-analysis*  
A. Jemal, L. Windsor, Rutgers University, New Brunswick, NJ
- 39 *Randomized controlled trial of CRAFT vs. treatment entry training alone for family members of treatment-resistant individuals*  
K. C. Kirby<sup>1,2</sup>, L. A. Benishek<sup>1,2</sup>, C. M. Carpenedo<sup>1</sup>, K. L. Dugosh<sup>1,2</sup>, E. Bresani<sup>1</sup>, <sup>1</sup>Treatment Research Institute, Philadelphia, PA, <sup>2</sup>School of Medicine, University of Pennsylvania, Philadelphia, PA
- 40 *Quality vs. quantity of coping skills following computerized CBT*  
B. D. Kiluk, C. Nich, T. Babuscio, K. M. Carroll, Psychiatry, Yale University School of Medicine, West Haven, CT
- 41 *What is happening in group? Coded observations of treatment-as-usual in outpatient group counseling*  
D. J. Knoblach<sup>1</sup>, A. C. Brooks<sup>1</sup>, C. E. Nick<sup>1</sup>, D. Carise<sup>2,3</sup>, K. C. Kirby<sup>1,3</sup>, <sup>1</sup>Treatment Research Institute, Philadelphia, PA, <sup>2</sup>Phoenix House, New York, NY, <sup>3</sup>University of Pennsylvania Department of Psychiatry, Philadelphia, PA
- 42 *Impact of first-week monetary incentives in a community substance abuse treatment program*  
S. J. Lookatch<sup>1</sup>, M. Tuten<sup>1</sup>, H. Fitzsimons<sup>1</sup>, H. Jones<sup>1,2</sup>, <sup>1</sup>School of Medicine, Department of Psychiatry, Johns Hopkins University, Baltimore, MD, <sup>2</sup>Research Triangle Institute International, Durham, NC
- 43 *Client transfers as a continuity of care measure*  
D. Urada, R. A. Rawson, A. J. Ober, J. Fan, V. J. Pearce, Integrated Substance Abuse Programs, UCLA, Los Angeles, CA
- 44 *Regulatory compliance of residential treatment clinics in west central Mexico*  
J. K. Cunningham<sup>1</sup>, O. Campollo<sup>2,3</sup>, F. Díaz<sup>4</sup>, C. M. Prado<sup>4</sup>, <sup>1</sup>Family and Community Medicine, University of Arizona, Tucson, AZ, <sup>2</sup>Center of Studies on Alcohol and Addictions, University of Guadalajara, Guadalajara, Mexico, <sup>3</sup>Smoking Cessation Clinic, Hospital Civil de Guadalajara, Guadalajara, Mexico, <sup>4</sup>Planning, State Council for Addictions of Jalisco (CECAJ), Zapopan, Mexico

- 45 *Residential treatment services in west central Mexico: Resources and needs*  
O. Campollo<sup>1,2</sup>, F. Díaz<sup>3</sup>, C. M. Prado<sup>3</sup>, J. K. Cunningham<sup>4</sup>, <sup>1</sup>Center of Studies on Alcohol and Addictions, University of Guadalajara, Guadalajara, Mexico, <sup>2</sup>Tobacco Cessation Clinic, Hospital Civil Guadalajara, Guadalajara, Mexico, <sup>3</sup>Planning, State Council for Addictions of Jalisco, Guadalajara, Mexico, <sup>4</sup>Family and Community Medicine, University of Arizona, Tucson, AZ
- 46 *Mindfulness-based psychotherapy for cannabis or cocaine dependence*  
E. Dakwar, J. P. Mariani, E. V. Nunes, F. R. Levin, Division on Substance Abuse, Columbia University, New York, NY
- 47 *Development of a new drum therapy treatment protocol for American Indians/Alaska Natives with substance use disorders*  
D. L. Dickerson, Integrated Substance Abuse Programs (ISAP), UCLA, Los Angeles, CA
- 48 *Effectiveness of two-stage training for brief interventionists in a multi-site trial*  
M. P. Bogenschutz<sup>1</sup>, A. A. Forcehimes<sup>1</sup>, C. Sanchez<sup>1</sup>, D. M. Donovan<sup>2</sup>, C. Dunn<sup>2</sup>, J. S. Baer<sup>2</sup>, K. Wilson<sup>1</sup>, R. N. Mandler<sup>3</sup>, H. I. Perl<sup>3</sup>, T. B. Moyers<sup>1</sup>, <sup>1</sup>CASAA, U. New Mexico, Albuquerque, NM, <sup>2</sup>U. Washington, Seattle, WA, <sup>3</sup>NIDA, Rockville, MD
- 49 *Preliminary findings from two studies of long-term recovery management for persons with stimulant or opiate dependence*  
G. S. Brigham<sup>1,2</sup>, R. G. Carlson<sup>3</sup>, B. M. Booth<sup>4</sup>, R. Falck<sup>3</sup>, <sup>1</sup>Department of Psychiatry, University of Cincinnati, Columbus, OH, <sup>2</sup>Research Institute, Maryhaven, Columbus, OH, <sup>3</sup>Boonshoft School of Medicine, Wright State University, Dayton, OH, <sup>4</sup>Department of Psychiatry, University of Arkansas for Medical Sciences, Little Rock, AR

### **PRESCRIPTION DRUG ABUSE**

- 50 *Predictors of non-prescribed use of prescription stimulants, sedatives, and opioids*  
E. C. Katz, J. Freedlander, Psychology, Towson University, Towson, MD
- 51 *Reactivity to laboratory-induced stress among individuals with prescription opioid dependence*  
S. E. Back<sup>1</sup>, S. M. DeSantis<sup>2</sup>, S. R. Shaftman<sup>2</sup>, L. M. Singleton<sup>1</sup>, J. L. Eaddy<sup>1</sup>, K. T. Brady<sup>1,3</sup>, <sup>1</sup>Psychiatry, Medical University of South Carolina, Charleston, SC, <sup>2</sup>Biostatistics, Bioinformatics & Epidemiology, Medical University of South Carolina, Charleston, SC, <sup>3</sup>Ralph H. Johnson Veterans Affairs Memorial Hospital, Charleston, SC
- 52 *Heroin use is a risk factor for injecting prescription opioids*  
A. Rosenblum<sup>1</sup>, C. Fong<sup>1</sup>, M. Parrino<sup>2</sup>, <sup>1</sup>ITSR, NDRI, New York, NY, <sup>2</sup>AATOD, New York, NY
- 53 *Intranasal abuse potential of Immediate-release Oxycodone (Acurox®; IROA) formulated to deter abuse*  
R. L. Rolleri<sup>1</sup>, J. Faulkner<sup>2</sup>, K. A. Schoedel<sup>2</sup>, G. C. Pixton<sup>1</sup>, N. Chen<sup>2</sup>, A. Bass<sup>1</sup>, E. M. Sellers<sup>2</sup>, <sup>1</sup>King Pharmaceuticals, Inc., Cary, NC, <sup>2</sup>Clinical Pharmacology, Kendle Early Stage - Toronto, Toronto, ON, Canada
- 54 *Assessment of the ease with which prescription opioid abusers prepare a TRF versus a non-TRF for abuse*  
S. K. Vosburg<sup>1</sup>, J. D. Jones<sup>1</sup>, J. M. Manubay<sup>1</sup>, J. B. Ashworth<sup>2</sup>, D. Shapiro<sup>3</sup>, S. D. Comer<sup>1</sup>, <sup>1</sup>Substance Abuse, Columbia University/NYS Psychiatric Institute, New York, NY, <sup>2</sup>Grünenthal GmbH, Aachen, Germany, <sup>3</sup>Johnson and Johnson Pharmaceuticals, Titusville, NJ
- 55 *Mitigation of morphine-induced respiratory depression when morphine sulfate and naltrexone hydrochloride extended release capsules are crushed and injected*  
L. Webster<sup>1</sup>, V. Goli<sup>2</sup>, M. J. Lamson<sup>3</sup>, E. Carter<sup>4</sup>, <sup>1</sup>Lifetree Clinical Research® and Pain Clinic, Salt Lake City, UT, <sup>2</sup>King Pharmaceuticals®, Inc., Cary, NC, <sup>3</sup>King Pharmaceuticals R&D, Inc., Cary, NC, <sup>4</sup>King Pharmaceuticals®, Inc., Cary, NC

- 56 *Predictors of outcome in the multi-site CTN Prescription Opioid Addiction Treatment Study*  
R. Weiss<sup>1,2</sup>, J. Potter<sup>3,1,2</sup>, M. Griffin<sup>1,2</sup>, H. Connery<sup>1,2</sup>, W. Ling<sup>4</sup>, <sup>1</sup>McLean Hospital, Belmont, MA, <sup>2</sup>Harvard Medical School, Boston, MA, <sup>3</sup>University of Texas Health Science Center, San Antonio, TX, <sup>4</sup>UCLA, Los Angeles, CA
- 57 *Public health impact of injecting prescription opioids*  
S. F. Butler, T. A. Cassidy, R. A. Black, T. A. Eaton, S. H. Budman, Inflexxion, Inc., Newton, MA
- 58 *Levels of knowledge about the risks and safe use of OxyContin® among prescribers of OxyContin®*  
A. T. Kline, J. Downing, H. Chilcoat, P. M. Coplan, Purdue Pharma, Stamford, CT
- 59 *The effect of family factors on prescription stimulant use in youth aged 10-15*  
L. E. Rapp, L. B. Cottler, S. Bradford, A. Ben-Abdallah, EPRG, Washington University School of Medicine, St. Louis, MO
- 60 *Weight control, depression and gambling associated with risk of nonmedical prescription stimulant use among pre-teen and teen girls*  
C. L. Striley, S. Bradford, L. B. Cottler, Psychiatry, Washington University, St. Louis, MO
- 61 *Psychiatric medication-seeking beliefs and behaviors among college students*  
A. M. Stone, L. J. Merlo, Psychiatry, University of Florida, Gainesville, FL
- 62 *Pill recognition and prescription stimulant brand name identification in N-MAPSS*  
L. B. Cottler, S. E. Bradford, C. W. Striley, Psychiatry, Washington University School of Medicine, St. Louis, MO
- 63 *Use of Rx stimulants for a reason other than prescribed: How operationalization affects prevalence rates for non-medical use in adolescents*  
S. E. Bradford, L. B. Cottler, A. Ben Abdallah, Psychiatry, Washington Univ. in St. Louis, Saint Louis, MO
- 64 *Prevalence, sources, motivations and diversion of psychoactive prescription medications among a university sample in Lebanon*  
L. Ghandour<sup>1</sup>, D. Elsayed<sup>1</sup>, S. Martins<sup>2</sup>, <sup>1</sup>Epidemiology and Population Health, American University of Beirut, Beirut, Lebanon, <sup>2</sup>Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD
- 65 *Predictors of severe prescription drug abuse among college students using the RADARS® System College Survey*  
A. Wheat<sup>1</sup>, C. Buchholtz<sup>1</sup>, J. Davis<sup>1</sup>, R. C. Dart<sup>1,2</sup>, <sup>1</sup>Rocky Mountain Poison & Drug Center - DHHA, Denver, CO, <sup>2</sup>University of Colorado Denver - School of Medicine, Aurora, CT
- 66 *Predictors of moderate, substantial or severe problems associated with drug abuse in college students reporting recent non-medical opioid use*  
J. Davis<sup>1</sup>, C. Buchholtz<sup>1</sup>, A. Wheat<sup>1</sup>, B. Bucher Bartelson<sup>1</sup>, R. C. Dart<sup>1,2</sup>, <sup>1</sup>Rocky Mountain Poison & Drug Center - DHHA, Denver, CO, <sup>2</sup>University of Colorado Denver - School of Medicine, Aurora, CO
- 67 *Prescription opioid misuse: Two motivational patterns?*  
M. J. Wunsch<sup>1</sup>, Y. Hodgkins<sup>2</sup>, K. Shaver<sup>2</sup>, K. Nakamoto<sup>1</sup>, R. D. Brown<sup>2</sup>, <sup>1</sup>Virginia Tech, Blacksburg, VA, <sup>2</sup>Carilion Clinic, Roanoke, VA
- 68 *Patterns of prescription medication diversion among drug dealers*  
K. Rigg, S. P. Kurtz, H. L. Surratt, Center for Drug & Alcohol Studies, University of Delaware, Coral Gables, FL

- 69 *Prescription drug diversion by pharmacists: Mechanisms and areas for prevention*  
L. J. Merlo<sup>1,2</sup>, S. M. Cummings<sup>2</sup>, L. B. Cottler<sup>2,1</sup>, <sup>1</sup>Psychiatry, University of Florida, Gainesville, FL, <sup>2</sup>Psychiatry, Washington University, St. Louis, MO
- 70 *Diversion and abuse of buprenorphine: Physician survey*  
C. Johanson<sup>1,2</sup>, C. Arfken<sup>2</sup>, C. Schuster<sup>1,2</sup>, <sup>1</sup>Psychiatry and Behavioral Neurosciences, Wayne State University, Chicago, IL, <sup>2</sup>CRS Associates, Chicago, IL
- 71 *Physicians' role in buprenorphine diversion reduction*  
A. Yang<sup>1</sup>, C. Arfken<sup>2</sup>, C. E. Johanson<sup>2,3</sup>, <sup>1</sup>Psychiatry & Behavior Neuroscience, University of Chicago, Chicago, IL, <sup>2</sup>Psychiatry and Behavioral Neurosciences, Wayne State University, Detroit, MI, <sup>3</sup>CRS Associates, LLC, Chicago, IL
- 72 *You've got drugs: Estimating illicit or internet sales of prescription opioids*  
C. Wright<sup>1</sup>, R. K. Lanier<sup>1</sup>, K. D. Gibson<sup>2</sup>, J. L. Loescher<sup>1</sup>, <sup>1</sup>Rock Creek Pharmaceuticals, Inc., Gloucester, MA, <sup>2</sup>Gibson Consulting, Somerville, MA
- 73 *Internet discussion endorsing or discouraging abuse of prescription opioids: The Endorsement Ratio*  
E. C. McNaughton, T. A. Cassidy, R. A. Black, S. H. Budman, S. F. Butler, Inflexxion, Inc., Newton, MA

### STIMULANTS: HUMAN I

- 74 *Relationship between executive functioning and intelligence implications for addictions treatment*  
A. M. Horton<sup>1</sup>, C. R. Reynolds<sup>2</sup>, <sup>1</sup>Neuropsychology Section, Psych Associates of Maryland, Bethesda, MD, <sup>2</sup>Educational Psychology, Texas A&M University, College Station, TX
- 75 *Eight weeks of citicoline treatment does not affect sleep or cognitive function in non-abstinent cocaine-dependent adults*  
B. K. Bracken<sup>1,2</sup>, D. M. Penetar<sup>1,2</sup>, J. Rodolico<sup>1,2</sup>, E. T. Ryan<sup>1</sup>, S. E. Lukas<sup>1,2</sup>, <sup>1</sup>McLean Hospital, Belmont, MA, <sup>2</sup>Harvard Med Sch, Boston, MA
- 76 *Cognitive functioning, mental health and substance use severity in adults with a history of methamphetamine use*  
D. Herbeck, C. Canamar, M. Brecht, Integrated Substance Abuse Programs, UCLA, Los Angeles, CA
- 77 *A randomized trial of the adjunct use of D-Cycloserine to facilitate cognitive behavioral therapy outcomes in a cocaine-dependent population*  
A. Kennedy<sup>1,2</sup>, R. Gross<sup>1</sup>, N. Whitfield<sup>3</sup>, K. Drexler<sup>1,3</sup>, C. Kilts<sup>1,2</sup>, <sup>1</sup>Psychiatry and Behavioral Sciences, Emory University College of Medicine, Atlanta, GA, <sup>2</sup>Psychiatric Research Institute, University of Arkansas for Medical Sciences, Little Rock, AR, <sup>3</sup>Atlanta Veteran's Administration Medical Center, Atlanta, GA
- 78 *The noradrenergic  $\alpha 1$  receptor antagonist doxazosin attenuates cocaine-induced craving in non-treatment-seeking, cocaine-dependent volunteers*  
T. Newton, R. De La Garza, II, R. Bennett, G. Brown, T. Kosten, C. Haile, J. Mahoney, Psychiatry, Baylor College of Medicine, Houston, TX
- 79 *Oral cocaine reduce "craving" in cocaine-dependent patients*  
T. Llosa, L. Llosa, Psychaitry, Coca Medica, Lima, Peru
- 80 *Varenicline for the treatment of methamphetamine dependence: A pilot study*  
A. Swanson<sup>1</sup>, S. Shoptaw<sup>1,2</sup>, K. Heinzerling<sup>1</sup>, <sup>1</sup>Family Medicine, UCLA, Los Angeles, CA, <sup>2</sup>Dept of Psychiatry and Biobehavioral Sciences, UCLA, Los Angeles, CA

- 81 *d-Amphetamine and atomoxetine for methamphetamine abuse*  
C. R. Rush, W. W. Stoops, J. A. Lile, P. E. Glaser, L. R. Hays, College of Medicine, University of Kentucky, Lexington, KY
- 82 *D-amphetamine withdrawal paradigm in methamphetamine dependence*  
M. J. Mancino, J. McGaugh, J. Thostenson, D. K. Williams, A. Oliveto, Psychiatry, University of Arkansas for Medical Sciences, Little Rock, AR
- 83 *Modafinil: A controlled trial for cocaine dependence*  
R. Malcolm<sup>1</sup>, S. LaRowe<sup>1,3</sup>, K. Huebner<sup>1</sup>, K. Barnes<sup>1</sup>, L. DeVane<sup>1</sup>, J. Donovan<sup>1</sup>, K. Barth<sup>1</sup>, R. Woolson<sup>2</sup>, <sup>1</sup>Psychiatry & Behavioral Sciences, Medical University of South Carolina, Charleston, SC, <sup>2</sup>Biometry, Medical University of South Carolina, Charleston, SC, <sup>3</sup>Charleston VAMC, Charleston, SC
- 84 *Escitalopram attenuates modafinil's therapeutic action in cocaine-dependent volunteers*  
R. De La Garza, II, T. Newton, C. Haile, S. Mehtani, J. J. Mahoney, III, R. Hawkins, Psychiatry, Baylor College of Medicine, Houston, TX
- 85 *Effects of buprenorphine tapering schedule on cocaine use among opioid-dependent treatment-seekers*  
T. Shutter, J. A. Lindsay, T. Kosten, Mental Health, Baylor College of Medicine, Houston, TX
- 86 *Cortisol secretion profile and treatment outcomes in a trial of mirtazapine for depressed cocaine-dependent patients*  
L. Sanfilippo, W. N. Raby, E. V. Nunes, Columbia University, New York City, NY
- 87 *Aripiprazole effects on cocaine pharmacodynamics and cocaine self-administration in humans*  
M. R. Lofwall<sup>1,2,3</sup>, P. A. Nuzzo<sup>2,3</sup>, S. L. Walsh<sup>1,2,3</sup>, <sup>1</sup>Psychiatry, University of Kentucky (UK), Lexington, KY, <sup>2</sup>Behavioral Science, UK, Lexington, KY, <sup>3</sup>Center on Drug and Alcohol Research, UK, Lexington, KY
- 88 *The influence of bupropion pretreatment on cocaine self-administration*  
W. W. Stoops<sup>1,2</sup>, J. A. Lile<sup>1</sup>, L. R. Hays<sup>3</sup>, P. E. Glaser<sup>3</sup>, C. R. Rush<sup>1,2,3</sup>, <sup>1</sup>Behavioral Science, University of Kentucky, Lexington, KY, <sup>2</sup>Psychology, University of Kentucky, Lexington, KY, <sup>3</sup>Psychiatry, University of Kentucky, Lexington, KY
- 89 *Increased serum brain-derived neurotrophic factor is predictive of cocaine relapse outcomes: A prospective study*  
C. D'Sa, H. Fox, A. Hong, R. J. Dileone, R. Sinha, Psychiatry, Yale University, New Haven, CT
- 90 *The Obsessive Compulsive Cocaine Scale: Assessment of factor structure, reliability, and convergent validity*  
B. Jardin<sup>1</sup>, S. D. LaRowe<sup>1,2</sup>, B. Hall<sup>1</sup>, R. J. Malcolm<sup>1</sup>, <sup>1</sup>Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston, SC, <sup>2</sup>Charleston VAMC, Charleston, SC
- 91 *Using ecological momentary assessment to predict next day methamphetamine use*  
G. P. Galloway, M. J. Baggott, J. R. Coyle, J. Mendelson, Addiction Pharmacology, California Pacific Medical Center Research Institute, San Francisco, CA
- 92 *Does alexithymia explain variation in cue-elicited craving reported by drug-dependent individuals?*  
E. J. Santa Ana<sup>1,2</sup>, M. E. Saladin<sup>2</sup>, S. D. LaRowe<sup>1,2</sup>, A. N. Simpson<sup>2</sup>, B. K. Tolliver<sup>2</sup>, K. L. Price<sup>2</sup>, A. L. McRae-Clark<sup>2</sup>, K. T. Brady<sup>2,1</sup>, <sup>1</sup>Ralph H. Johnson Veterans Affairs Medical Center, Charleston, SC, <sup>2</sup>Medical University of South Carolina, Charleston, SC



- 93 *Relationship between extinction of attentional bias to cocaine-related stimuli and the severity of cocaine dependence*  
S. Liu<sup>1</sup>, S. D. Lane<sup>1</sup>, J. M. Schmitz<sup>1</sup>, K. A. Cunningham<sup>2</sup>, F. G. Moeller<sup>1</sup>, <sup>1</sup>Psychiatry, University of Texas Health Science Center at Houston, Houston, TX, <sup>2</sup>Pharmacology and Toxicology and Center for Addiction Research, University of Texas Medical Branch, Galveston, TX
- 94 *Immediate rewards improve outcomes for methamphetamine addiction: A behavioral economic analysis of a contingency management treatment program*  
K. Ling<sup>1</sup>, T. Krishnamurti<sup>3</sup>, S. Shoptaw<sup>1,2</sup>, <sup>1</sup>Family Medicine, UCLA DGSOM, Los Angeles, CA, <sup>2</sup>Psychiatry and Biobehavioral Sciences, UCLA DGSOM, Los Angeles, CA, <sup>3</sup>Carnegie Mellon University, Pittsburgh, PA
- 95 *Cocaine behavioral economics: From the naturalistic environment to the controlled laboratory setting*  
C. L. Steinmiller, M. K. Greenwald, Psychiatry & Behavioral Neurosciences, Wayne State University, Detroit, MI
- 96 *Effect of contingency management analogs on cocaine behavioral economic demand in the laboratory setting*  
M. Greenwald, D. M. Ledgerwood, C. L. Steinmiller, Wayne State University, Detroit, MI
- 97 *Contingency management for cocaine addicts: Neuropsychological outcomes*  
G. García-Fernández, O. García-Rodríguez, R. Secades-Villa, S. Fernández-Artamendi, J. Fernández-Hermida, Department of Psychology, University of Oviedo, Oviedo, Spain
- 98 *Individual characteristics and response to contingency management treatment for cocaine addiction*  
R. Secades-Villa<sup>1</sup>, E. Sánchez-Hervás<sup>2</sup>, O. García-Rodríguez<sup>1</sup>, G. García-Fernández<sup>1</sup>, S. Fernández Artamendi<sup>1</sup>, J. R. Fernández-Hermida<sup>1</sup>, <sup>1</sup>Psychology, University of Oviedo, Oviedo, Spain, <sup>2</sup>Dept 10, State Health Agency, Valencia, Spain
- 99 *Delay discounting as a predictor of treatment response among cocaine-dependent outpatients*  
Y. Washio<sup>1</sup>, S. T. Higgins<sup>1,2</sup>, S. H. Heil<sup>1,2</sup>, T. L. McKerchar<sup>3</sup>, G. J. Badger<sup>4</sup>, J. M. Skelly<sup>4</sup>, R. L. Dantona<sup>1</sup>, <sup>1</sup>Psychiatry, University of Vermont, Burlington, VT, <sup>2</sup>Psychology, University of Vermont, Burlington, VT, <sup>3</sup>Psychology, Jacksonville State University, Jacksonville, AZ, <sup>4</sup>Medical Biostatistics, University of Vermont, Burlington, VT
- 100 *Future, past, probability, and social discounting by active methamphetamine users*  
R. Yi<sup>1</sup>, A. E. Carter<sup>2</sup>, R. D. Landes<sup>3</sup>, <sup>1</sup>Psychology, University of Maryland, College Park, MD, <sup>2</sup>Psychiatry, University of Arkansas for Medical Sciences, Little Rock, AR, <sup>3</sup>Biostatistics, University of Arkansas for Medical Sciences, Little Rock, AR
- 101 *Inter-temporal choice among methamphetamine-dependent volunteers: Comparison of immediately available money vs. methamphetamine*  
J. H. Yoon, C. S. Nerumalla, Y. Omar, G. S. Brown, R. De La Garza, II, T. F. Newton, Psychiatry and Behavioral Research, Baylor College of Medicine, Houston, TX
- 102 *On the rapid devaluation of consumable commodities in cocaine addicts: Cross-commodity discounting of sex vs. money*  
D. P. Jarmolowicz<sup>1</sup>, W. K. Bickel<sup>1</sup>, R. D. Landes<sup>2</sup>, D. R. Christensen<sup>3</sup>, L. Jackson<sup>2</sup>, B. A. Jones<sup>4</sup>, <sup>1</sup>Virginia Tech Carilion Research Institute, Roanoke, VA, <sup>2</sup>University of Arkansas for Medical Sciences, Little Rock, AR, <sup>3</sup>University of Melbourne, Melbourne, VIC, Australia, <sup>4</sup>Kent State University, Ashtabula, Ashtabula, OH

### LITERATURE REVIEWS

- 103 *Vouchers, prizes and clinic privileges as reinforcement for abstinence: A review of the efficacy of contingency management applications*  
B. J. Hartzler<sup>1</sup>, S. Lash<sup>2,3</sup>, J. Roll<sup>4</sup>, <sup>1</sup>Alcohol & Drug Abuse Institute, University of Washington, Seattle, WA, <sup>2</sup>Veteran's Affairs Medical Center, Salem, VA, <sup>3</sup>Psychiatry and Neurobehavioral Medicine, University of Virginia, Charlottesville, VA, <sup>4</sup>Program of Excellence in Addictions, Washington State University, Pullman, WA
- 104 *Motivational interviewing: A review of coding systems*  
J. K. Manuel<sup>1</sup>, J. M. Houck<sup>2</sup>, T. B. Moyers<sup>2</sup>, <sup>1</sup>Department of Psychiatry, University of California, San Francisco, San Francisco, CA, <sup>2</sup>Department of Psychology, University of New Mexico, Albuquerque, NM
- 105 *Do gambling-induced disorders exist?*  
M. Fatséas<sup>1,2</sup>, E. Bosc<sup>2</sup>, C. Denis<sup>2,1</sup>, M. Auriacombe<sup>1,2</sup>, <sup>1</sup>Addiction Psychiatry (UMSR-CNRS), Université Victor Segalen Bordeaux 2, Bordeaux, France, <sup>2</sup>Addiction Treatment Center, CHCP et CHU, Bordeaux, France
- 106 *Screening, brief intervention, and referral to treatment for drug- and alcohol-related health problems in emergency departments: Review of outcomes, implementations, and feasibility*  
D. J. Fischer<sup>1</sup>, D. M. Donovan<sup>2</sup>, M. P. Bogenschutz<sup>1</sup>, A. A. Forcehimes<sup>1</sup>, <sup>1</sup>CASAA, University of New Mexico, Albuquerque, NM, <sup>2</sup>U. Washington, Seattle, WA
- 107 *Alcohol and drug treatment outcome studies methodological review (2005-2010)*  
S. Robinson, S. Arcidiacono, D. Tzall, L. Sobell, M. Sobell, Nova Southeastern University, Fort Lauderdale, FL
- 108 *Contraceptive adherence and method choice among women with drug and alcohol problems: A systematic review*  
M. Terplan<sup>1</sup>, K. Hladky<sup>1</sup>, M. Chisolm<sup>3</sup>, S. Tristan<sup>2</sup>, <sup>1</sup>Obstetrics, Gynecology and Reproductive Sciences, University of Maryland Baltimore, Baltimore, MD, <sup>2</sup>Obstetrics and Gynecology, New York University, New York City, NY, <sup>3</sup>Psychiatry and Behavioral Sciences, Johns Hopkins University, Baltimore, MD
- 109 *Issues faced by female injection drug users: A review of the literature*  
L. E. Pennington, Social Work, New York University, New York, NY
- 110 *Treatment of MDMA(ecstasy)-associated hyponatremia (MDMA-AH)*  
A. J. Siegel, McLean Hospital, Belmont, MA
- 111 *Sex differences in drug abuse*  
J. Perry, M. Kuhar, Behavioral Neuroscience, Yerkes National Primate Research Center, Atlanta, GA

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- 112 *ERK and CREB are associated with cocaine-induced conditioned place preference*  
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- 113 *Effect of sex in selecting between food and cocaine*  
K. A. Kerstetter<sup>1</sup>, M. Ballis<sup>1</sup>, A. E. Carr<sup>1</sup>, A. Behrens<sup>1</sup>, T. E. Kippin<sup>1,2</sup>, <sup>1</sup>Psychology, University of California at Santa Barbara, Santa Barbara, CA, <sup>2</sup>Neuroscience Research Institute, University of California at Santa Barbara, Santa Barbara, CA
- 114 *Sex differences in response to gaboxadol modification of cocaine-induced behaviors*  
N. Siegal, D. Dow-Edwards, Physiology / Pharmacology, SUNY Downstate College of Medicine, Brooklyn, NY

- 115 *Adolescent male and female rats show enhanced responding to sucrose reward in a Pavlovian conditioning paradigm*  
L. M. Robertson<sup>1</sup>, N. B. Senese<sup>2</sup>, B. A. Marcus<sup>2</sup>, A. J. Waldman<sup>2</sup>, J. M. Gulley<sup>1,2</sup>,  
<sup>1</sup>Neuroscience, Univ. Illinois Urbana-Champaign, Champaign, IL, <sup>2</sup>Psychology, Univ. Illinois Urbana-Champaign, Champaign, IL
- 116 *Litter gender composition alters maternal behavior in rats*  
T. A. Kosten, Y. Hao, W. Huang, D. A. Nielsen, Psychiatry, Baylor College of Medicine, Houston, TX
- 117 *Sex differences in the effects of early life stress on addiction-related cognitive deficits*  
A. Elton, C. Kilts, University of Arkansas for Medical Sciences, Little Rock, AR
- 118 *Chronic marijuana use is associated with gender-dependent alterations in cortical micro-structure*  
R. M. Gonzales, G. King, H. Nakama, T. Ernst, L. Chang, Department of Medicine, University of Hawaii, Honolulu, HI
- 119 *Gender and cannabis use: Is there evidence of ‘telescoping’?*  
K. M. Zumberg, L. H. Lundahl, Psychiatry and Behavioral Neuroscience, Wayne State University School of Medicine, Detroit, MI
- 120 *Gender-specific relationship between distress tolerance and HPA axis response to stress among adolescents*  
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- 121 *Relationship between estradiol and mood in women smokers*  
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- 122 *The relationship between gender and expectancies for the process of smoking cessation*  
P. Hendricks<sup>1,2</sup>, S. M. Hall<sup>2</sup>, <sup>1</sup>Health Behavior, University of Alabama at Birmingham, Birmingham, AL, <sup>2</sup>Psychiatry, University of California, San Francisco, San Francisco, CA
- 123 *Gender differences in exercise patterns for persons enrolled in community-based SUD treatment and recovery programs*  
L. Islam<sup>1</sup>, P. Dillon<sup>3</sup>, D. Wilson<sup>2</sup>, L. Keyser-Marcus<sup>1</sup>, T. Rieckmann<sup>4</sup>, S. Ondersma<sup>5</sup>, D. Svikis<sup>1</sup>,  
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- 124 *Neurocognitive functioning among patients receiving treatment for substance use disorders: sociodemographic and drug use characteristics*  
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<sup>1</sup>McLean Hospital/Harvard Medical School, Belmont, MA, <sup>2</sup>Johns Hopkins School of Medicine, Baltimore, MD
- 125 *Understanding drug use trajectories leading to injection initiation among female sex workers who inject drugs*  
M. D. Morris<sup>1</sup>, A. Vera<sup>1</sup>, G. Martinez<sup>2</sup>, L. Lozada<sup>2</sup>, S. A. Strathdee<sup>1</sup>, <sup>1</sup>Division of Global Public Health, University of California San Diego, La Jolla, CA, <sup>2</sup>Patronato Pro-COMUSIDA AC, Tijuana, Mexico

- 126 *Gender differences and similarities in sexual risk behavior: Implications for assessment and intervention in substance abuse treatment settings*  
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- 127 *Gender differences in methadone-maintained cocaine users*  
S. Mulpur, J. Lindsay, T. Kosten, Baylor College of Medicine, Houston, TX
- 128 *Gender differences in risk factors for new-onset nonmedical use of opioids, heroin and other drugs: Findings from NESARC*  
P. H. Smith<sup>1</sup>, J. S. Masci<sup>2</sup>, G. G. Homish<sup>1,3</sup>, K. E. Leonard<sup>2,3</sup>, <sup>1</sup>Community Health and Health Behavior, SUNY at Buffalo, Buffalo, NY, <sup>2</sup>Psychiatry, SUNY at Buffalo, Buffalo, NY, <sup>3</sup>Research Institute on Addictions, SUNY at Buffalo, Buffalo, NY
- 129 *Gender differences in 30-year trajectories of heroin and other drug use and health outcomes*  
C. Grella, K. Lovinger, Integrated Substance Abuse Programs, UCLA, Los Angeles, CA
- 130 *Gender differences in health and perceptions of drug misuse among prescription opioid misusers*  
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- 131 *Nicotine modulates expression of dynamin 1 in rat brain and in SH-SY5Y cells*  
Q. Xu<sup>1</sup>, M. Li<sup>2</sup>, <sup>1</sup>Biological Science and Bioengineering, Institute of Beijing Jiaotong University, Beijing, China, <sup>2</sup>Psychiatry and Neurobehavioral Sciences, University of Virginia, Charlottesville, VA
- 132 *The roles of nicotinic and muscarinic cholinergic receptors in cost-benefit decision making*  
I. A. Mendez<sup>1</sup>, J. C. Damborsky<sup>2</sup>, U. Winzer-Serhan<sup>2</sup>, J. L. Bizon<sup>1</sup>, B. Setlow<sup>3</sup>, <sup>1</sup>Department of Psychology, Texas A&M University, College Station, TX, <sup>2</sup>Department of Neuroscience and Experimental Therapeutics, Texas A&M University Health Science Center, College Station, TX, <sup>3</sup>Department of Psychiatry, University of Florida College of Medicine, Gainesville, FL
- 133 *Effects of varenicline and reinforcing abstinence with an alternative nondrug reinforcer alone and in combination on nicotine self-administration in rats*  
M. G. LeSage, Medicine, Minneapolis Medical Research Foundation, Minneapolis, MN
- 134 *Smoking reinforcement is associated with inhibitory control performance in adult regular smokers*  
S. H. Kollins, F. J. McClernon, J. S. English, B. O'Brien, Duke University Medical Center, Durham, NC
- 135 *Reinforcing effects of nicotine in nicotine non-users*  
A. N. Duke, R. R. Griffiths, Behavioral Pharmacology Research Unit, Johns Hopkins University School of Medicine, Baltimore, MD
- 136 *Abuse liability assessment of electronic cigarettes in cigarette smokers*  
A. R. Vansickel, T. Eissenberg, Virginia Commonwealth University, Richmond, VA
- 137 *E-cigarette abuse liability: Subjective and behavioral effects of short-term switching*  
V. W. Rees, J. K. Noel, G. N. Connolly, Center for Global Tobacco Control, Harvard School of Public Health, Boston, MA
- 138 *Impulsivity, stress and depression among cigarette smokers in community corrections: Relation to suicidal behavior*  
C. McCullumsmith, A. Perkins, C. B. Clark, K. Cropsey, UAB, Birmingham, AL
- 139 *Impulsivity and symptoms of ADHD and ODD/CD in daily-smoking adolescents*  
G. Kong, T. Liss, D. Cavallo, A. Liss, S. Krishnan-Sarin, Yale University School of Medicine, New Haven, CT

- 140 *Impulsiveness of tobacco and street drug addiction: Delay discounting among community corrections participants who are dependent on legal and illicit substances*  
A. C. Perkins, B. Clark, S. Hardy, N. Katiyar, K. Cropsey, Psychiatry, University of Alabama, Birmingham, Birmingham, AL
- 141 *Baseline delay discounting predicts response to a behavioral smoking intervention among opioid-maintained patients*  
K. A. Saulsgiver, K. Dunn, S. Sigmon, S. Heil, S. Higgins, Psychiatry, University of Vermont, Burlington, VT
- 142 *Education and reinforcing efficacy of cigarettes predict rates of delay discounting among smokers*  
E. T. Mueller<sup>1</sup>, W. K. Bickel<sup>1</sup>, R. D. Landes<sup>2</sup>, B. P. Kowal<sup>3</sup>, R. Yi<sup>4</sup>, <sup>1</sup>Virginia Tech Carilion School of Medicine, Roanoke, VA, <sup>2</sup>University of Arkansas for Medical Sciences, Little Rock, AR, <sup>3</sup>University of Arkansas at Little Rock, Little Rock, AR, <sup>4</sup>University of Maryland, College Park, MD
- 143 *Prize-based contingency management and standard treatment for smoking cessation*  
D. M. Ledgerwood<sup>1</sup>, C. L. Arfken<sup>1</sup>, N. M. Petry<sup>2</sup>, S. M. Alessi<sup>2</sup>, <sup>1</sup>Department of Psychiatry and Behavioral Neurosciences, Wayne State School of Medicine, Detroit, MI, <sup>2</sup>Calhoun Cardiology Center, University of Connecticut Health Center, Farmington, CT
- 144 *Contingency management for smoking cessation: Do prizes help methadone patients quit?*  
B. Knezevic, A. A. Wiedemann, M. K. Greenwald, D. M. Ledgerwood, Wayne State University, Detroit, MI
- 145 *A 12-week contingency management intervention to promote smoking cessation in opioid-maintained individuals*  
M. E. Patrick, K. Saulsgiver, S. Sigmon, S. Higgins, University of Vermont, Burlington, VT
- 146 *Acceptability and efficacy of Internet-based contingency management to promote smoking cessation*  
B. R. Raiff<sup>1</sup>, A. Rojewski<sup>2</sup>, J. Dallery<sup>1,2</sup>, <sup>1</sup>National Development Research Institutes, New York, NY, <sup>2</sup>University of Florida, Gainesville, FL
- 147 *An Internet-based group contingency management program to promote smoking cessation*  
S. Meredith<sup>1</sup>, M. Grabinski<sup>2</sup>, J. Dallery<sup>1,3</sup>, <sup>1</sup>University of Florida, Gainesville, FL, <sup>2</sup>Red 5 Group, New York, NY, <sup>3</sup>National Development and Research Institutes, Inc., New York, NY
- 148 *Smoking cessation RCT based on CBPR. Difficult but feasible. And better*  
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- 149 *Differences in parenting in smokers vs. non-smokers during pregnancy*  
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- 150 *Characterization of smoking motives between African-American and European-American smokers*  
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- 151 *Epidemiological evidence of an alcohol dependence process phenotype observable soon after drinking onset*  
D. A. Barondess, J. C. Anthony, Epidemiology, Michigan State University, East Lansing, MI



- 152 *Are perceived neighborhood environment characteristics associated with the likelihood of smoking and alcohol use?*  
N. Jitnarin<sup>1,2</sup>, K. M. Heinrich<sup>3</sup>, C. K. Haddock<sup>1</sup>, J. Hughey<sup>4</sup>, L. A. Berkel<sup>4</sup>, W. C. Poston<sup>1</sup>,  
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- 153 *Neighborhood perceptions association with depression*  
R. J. Evans-Polce<sup>1</sup>, C. Latkin<sup>1</sup>, A. Hulbert<sup>2</sup>, <sup>1</sup>Health, Behavior, and Society, Johns Hopkins School of Public Health, Baltimore, MD, <sup>2</sup>Oncology, Johns Hopkins Medical Institution, Baltimore, MD
- 154 *Smoking rates significantly elevated in drug-dependent study populations*  
K. Hartwell<sup>1,2</sup>, A. Simpson<sup>1</sup>, D. Friedrich<sup>3</sup>, R. Lewis<sup>4</sup>, S. Thomas<sup>1</sup>, A. McRae-Clark<sup>1</sup>, S. Back<sup>1</sup>,  
K. Brady<sup>1,2</sup>, <sup>1</sup>MUSC, Charleston, SC, <sup>2</sup>Ralph H Johnson VAMC, Charleston, SC, <sup>3</sup>Cornell University, Ithaca, NY, <sup>4</sup>SC Dept Health and Environmental Control, Columbia, SC
- 155 *Smokeless tobacco use and onset of cigarette smoking: A case-crossover study*  
J. P. Troost, J. C. Anthony, Epidemiology, Michigan State University, East Lansing, MI
- 156 *A case-crossover approach to gateway research: First cigar to first blunt smoking*  
B. Fairman, J. C. Anthony, Epidemiology, Michigan State University, East Lansing, MI
- 157 *The prevalence of THC among drivers in a medical marijuana state*  
T. Kelley-Baker, R. B. Voas, M. Johnson, J. Lacey, Pacific Institute for Research and Evaluation, Calverton, MD
- 158 *Young adults' anonymous self reports of marijuana use online are reliable and valid*  
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- 159 *Perceptions of benefits and risks of methamphetamine use*  
J. C. Maxwell, Addiction Research Institute, University of Texas at Austin, Austin, TX
- 160 *WITHDRAWN*
- 161 *Factors influencing study effort in young, low-income women in a longitudinal cohort study*  
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- 162 *Burden of substance abuse in elderly prostate cancer patients*  
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- 163 *Hepatitis C among homeless clients of Health Care for the Homeless primary care clinics*  
L. Gelberg<sup>1</sup>, A. J. Strehlow<sup>5</sup>, M. J. Robertson<sup>2</sup>, S. Zerger<sup>3</sup>, C. R. Rongey<sup>4</sup>, L. E. Arangua<sup>1</sup>,  
E. Farrell<sup>6</sup>, A. O'Sullivan<sup>7</sup>, <sup>1</sup>Family Medicine, UCLA, Los Angeles, CA, <sup>2</sup>Alcohol Research Group, Public Health Institute, Emeryville, CA, <sup>3</sup>Center for Social Innovation, Needham, MA, <sup>4</sup>San Francisco Veterans Affairs Medical Center, UCSF, San Francisco, CA, <sup>5</sup>School of Nursing, UCLA, Los Angeles, CA, <sup>6</sup>Clinica Family Health Services, Thornton, CO, <sup>7</sup>Health Care For The Homeless, Phoenix, AZ
- 164 *Patterns of recreational use of GBL, impact on prevention policy - In situ survey*  
S. Balester Mouret, M. Benchaar, P. Batel, UTAMA, CHU Beaujon - Hôpitaux de Paris, Clichy, France
- 165 *Community and drug use among gay men: The role of neighborhoods and networks*  
B. C. Kelly<sup>1</sup>, R. M. Carpiano<sup>2</sup>, A. Easterbrook<sup>2</sup>, J. T. Parsons<sup>3</sup>, <sup>1</sup>Sociology, Purdue University, West Lafayette, IN, <sup>2</sup>Sociology, University of British Columbia, Vancouver, BC, Canada, <sup>3</sup>Psychology, City University of New York, New York, NY

166 *Use of over-the-counter codeine in Australia*

J. Cassar<sup>1</sup>, L. Burns<sup>1</sup>, S. Arora<sup>2</sup>, B. De Graaff<sup>2</sup>, B. Phillips<sup>1</sup>, R. Bruno<sup>2</sup>, S. Neilsen<sup>3</sup>, <sup>1</sup>National Drug and Alcohol Research Centre, New South Wales, NSW, Australia, <sup>2</sup>University of Tasmania, Tasmania, TAS, Australia, <sup>3</sup>Turning Point Alcohol and Drug Centre, Eastern Health, Melbourne, VIC, Australia

167 *Assessment of individual differences in the rewarding and aversive effects of 10 mg/kg morphine*  
A. Verendeef, A. L. Riley, Psychology, American University, Washington, DC

### Symposium II

#### Regency 1

10:00 AM - 12:00 NOON

#### NALTREXONE IN THE TREATMENT OF OPIOID ADDICTION: CURRENT RESEARCH AND NOVEL APPLICATIONS

Chairs: Kenneth Silverman and Sandra D. Comer

10:00 *Naltrexone maintenance for opioid dependence: A decade of NIDA-funded clinical trials*  
Maria A. Sullivan, New York State Psychiatric Institute, Columbia University, New York, NY

10:24 *Naltrexone in Russia: Oral, implantable, and injectable*  
Evgeny Krupitsky, Bekhterev Research Psychoneurological Institute, St. Petersburg, Russian Federation

10:48 *Naltrexone for prevention of relapse in parolees with a history of opioid addiction*  
Charles O'Brien, University of Pennsylvania, Philadelphia, PA

11:12 *Employment-based reinforcement of naltrexone adherence: A maintenance treatment for heroin addiction*  
Kenneth Silverman, Johns Hopkins University School of Medicine, Baltimore, MD

11:36 *Implications of using sustained-release naltrexone in various populations: Critical issues*  
Sandra D. Comer, New York State Psychiatric Institute, Columbia University, New York, NY

### Symposium III

#### Regency 3

10:00 - 11:00 AM

#### PLASTICITY IN REWARD CIRCUITS DURING ADOLESCENCE: EFFECTS OF EARLY DRUG EXPOSURE

Chairs: Sari Izenwasser and Kathleen Kantak

10:00 *Cognitive functioning of rats exposed to self-administered cocaine during adolescence vs. adulthood*  
Kathleen Kantak, Boston University, Boston, MA

10:20 *Enrichment differentially alters stimulant reward and dopamine markers in male and female adolescents*  
Sari Izenwasser, University of Miami Miller School of Medicine, Miami, FL

10:40 *Neurobehavioral changes exhibited in adulthood after cannabinoid exposure during adolescence*  
Emilio Ambrosio, University for Distance Learning (UNED), Madrid, Spain

*BADGES MUST BE WORN FOR ALL SESSIONS AND SOCIAL EVENTS*

### Oral Communications 4

Regency 3

11:15 AM - 12:15 PM

#### DRUGS AND PREGNANCY

Chairs: Margaret S. Chisolm and Loretta Finnegan

- 11:15 *Cigarette smoking and neonatal abstinence syndrome in opioid-dependent agonist-maintained pregnant patients on methadone vs. buprenorphine*  
M. S. Chisolm<sup>1</sup>, S. P. Acquavita<sup>1</sup>, K. Kaltenbach<sup>2</sup>, B. Winklbaaur<sup>3</sup>, S. H. Heil<sup>4</sup>, P. R. Martin<sup>5</sup>, S. M. Stine<sup>6</sup>, M. Coyle<sup>7</sup>, J. S. Leoutsakos<sup>1</sup>, L. M. Jansson<sup>1</sup>, M. Tuten<sup>1</sup>, H. Jones<sup>1</sup>, <sup>1</sup>Johns Hopkins University, Baltimore, MD, <sup>2</sup>Thomas Jefferson University, Philadelphia, PA, <sup>3</sup>Medical University of Vienna, Vienna, Austria, <sup>4</sup>University of Vermont, Burlington, VT, <sup>5</sup>Vanderbilt University, Nashville, TN, <sup>6</sup>Wayne State University, Detroit, MI, <sup>7</sup>Brown University, Providence, RI
- 11:30 *Pre-conception markers of dual risk for alcohol and smoking exposed pregnancy: Tools for primary prevention*  
J. E. Hettema, K. S. Ingersoll, Psychiatry and Neurobehavioral Sciences, University of Virginia, Charlottesville, CA
- 11:45 *Delay discounting predicts smoke status during pregnancy*  
M. P. Bradstreet, S. T. Higgins, S. H. Heil, G. J. Badger, J. M. Skelly, University of Vermont, Burlington, VT
- 12:00 *An indirect self-report screener for identification of drug use in pregnant women*  
C. Smith<sup>1</sup>, S. J. Ondersma<sup>2</sup>, A. Unser<sup>1</sup>, D. Wooten<sup>1</sup>, D. S. Svikis<sup>1</sup>, <sup>1</sup>Psychology, Virginia Commonwealth University, Richmond, VA, <sup>2</sup>Psychiatry, Wayne State University, Detroit, MI

### Oral Communications 5

Diplomat 1-2

10:00 - 11:00 AM

#### OUTSIDE THE BOX: NEW APPROACHES TO THERAPEUTICS

Chairs: David M. Penetar and Judson Brewer

- 10:00 *The isoflavone puerarin reduces alcohol intake in heavy drinkers*  
D. M. Penetar, L. H. Toto, S. L. Farmer, S. E. Lukas, Behavioral Psychopharmacology Research Lab, McLean Hospital/Harvard Medical School, Belmont, MA
- 10:15 *Mindfulness Training for smoking cessation: Results from a randomized controlled trial*  
J. Brewer, S. Mallik, T. Babuscio, C. Nich, H. Johnson, C. Deleone, C. Minnix-Cotton, S. Byrne, A. Weinstein, H. Kober, K. Carroll, B. Rounsaville, Psychiatry, Yale University School of Medicine, New Haven, CT
- 10:30 *Collegiate Recovery Communities: Student membership and prospective outcomes*  
A. K. Baker<sup>1</sup>, A. B. Laudet<sup>2</sup>, K. Harris<sup>1</sup>, <sup>1</sup>Center for the Study of Addiction & Recovery, Texas Tech University, Lubbock, TX, <sup>2</sup>C-STAR, NDRI, New York City, NY
- 10:45 *Mentorship for alcohol problems*  
K. Tracy<sup>1</sup>, M. Burton<sup>1</sup>, A. Miescher<sup>1</sup>, M. Galanter<sup>1</sup>, T. Babuscio<sup>2</sup>, T. Frankforter<sup>2</sup>, C. Nich<sup>2</sup>, B. Rounsaville<sup>2</sup>, <sup>1</sup>New York University School of Medicine, New York, NY, <sup>2</sup>Yale University School of Medicine, New Haven, CT

## **Symposium IV**

**Diplomat 1-2  
11:15 AM - 12:15 PM**

### **EPIDEMIOLOGY OF CHRONIC PAIN AND CLINICAL MANAGEMENT AMONG INDIVIDUALS WITH A SUBSTANCE USE DISORDER**

Chairs: Lara Dhingra and Carmen L. Masson

- 11:15 *Epidemiology of pain in a methadone maintenance treatment population: Demographic and medical correlates of pain experience*  
Lara Dhingra, Beth Israel Medical Center and Albert Einstein College of Medicine, New York, NY
- 11:35 *Clinical aspects of risk management for opioid therapy to improve chronic pain in patients with substance use disorders*  
Steve Passik, Vanderbilt University Medical Center, Nashville, TN
- 11:55 *Funding opportunities and research portfolio on chronic pain and prescription opioid abuse at the National Institute on Drug Abuse*  
Richard Denisco, National Institute on Drug Abuse, Bethesda, MD

## **Oral Communications 6**

**Diplomat 4-5  
10:00 AM - 12:00 NOON**

### **CRACK IN THE ANIMAL HOUSE: PRECLINICAL STIMULANTS**

Chairs: Karen K. Szumlinski and Bríd Áine Nic Dhonnchadha

- 10:00 *Roles of hippocampal and amygdalar cAMP and cGMP in extinction of cocaine-induced conditioned place preference*  
Y. Itzhak, S. A. Liddie, A. Paz, K. L. Anderson, Psychiatry & Behavioral Sciences, University of Miami Miller School of Medicine, Miami, FL
- 10:15 *The hypocretin/orexin system regulates dopamine responses to cocaine*  
R. A. España, D. C. Roberts, S. R. Jones, Physiology and Pharmacology, Wake Forest University Health Sciences, Winston Salem, NC
- 10:30 *Interaction between 5-HT<sub>2A</sub> receptor blockade and 5-HT<sub>2C</sub> receptor activation on spontaneous and cocaine-induced locomotion*  
L. A. Pockros<sup>2</sup>, N. Pentkowski<sup>1</sup>, A. Berger<sup>1</sup>, M. Ostos<sup>1</sup>, S. Conway<sup>1</sup>, J. Neisewander<sup>1</sup>, <sup>1</sup>School of Life Sciences, Arizona State University, Tempe, AZ, <sup>2</sup>Psychology, Arizona State University, Tempe, AZ
- 10:45 *Long-term cocaine self-administration by rhesus monkeys results in increased expression of  $\alpha 1$  subunits of the GABAA receptor*  
N. M. Shinday<sup>1,2</sup>, S. Westmoreland<sup>1</sup>, W. Yao<sup>1,2</sup>, J. K. Rowlett<sup>1,2</sup>, <sup>1</sup>New England Primate Research Center-Harvard Medical School, Southborough, MA, <sup>2</sup>Univ of Massachusetts, Amherst, MA
- 11:00 *Involvement of V1b and kappa opioid receptors in HPA hyperactivity during acute withdrawal from chronic cocaine exposure in rodents*  
Y. Zhou<sup>1</sup>, Y. Litvin<sup>2</sup>, E. Butelman<sup>1</sup>, A. Ho<sup>1</sup>, D. Pfaff<sup>2</sup>, M. J. Kreek<sup>1</sup>, <sup>1</sup>Biology of Addictive Diseases, Rockefeller University, NY, NY, <sup>2</sup>Neurobiology Behavior, Rockefeller University, New York, NY

- 11:15 *Functional studies of cocaine-induced increases in prefrontal cortex mGluR1, PI3K and PKC epsilon expression for cocaine-seeking in mice*  
K. K. Szumlinski, J. A. Courson, A. W. Ary, Psychology, University of California, Santa Barbara, Santa Barbara, CA
- 11:30 *c-Fos and AMPA receptor expression following cocaine cue extinction learning*  
B. Áine Nic Dhonnchadha<sup>1</sup>, B. Lovascio<sup>1</sup>, N. Shrestha<sup>1</sup>, C. Kirkman<sup>1</sup>, A. Lin<sup>1</sup>, H. Y. Man<sup>1</sup>, K. Leite-Morris<sup>2</sup>, G. B. Kaplan<sup>1,2</sup>, K. M. Kantak<sup>1</sup>, <sup>1</sup>Boston University, Boston, MA, <sup>2</sup>VA Boston Healthcare, Boston, MA
- 11:45 *Brain-region specific changes in serotonin 2C receptor and phospholipase D signaling track with a distinct behavioral phenotype expressed in conditioned hyperactivity to cocaine*  
B. Krishnan, N. C. Anastasio, R. G. Fox, S. J. Stutz, K. A. Cunningham, Center for Addiction Research, Department of Pharmacology and Toxicology, UTMB, Galveston, TX

### Animals in Research Forum

**Atlantic Ballroom**  
**12:15 - 2:00 PM**

Chairs: Nancy A. Ator and Toby K. Eisenstein

- 12:15 *Animal research: Why is public support waning?*  
Richard K. Nakamura, National Institute of Mental Health, Bethesda, MD
- 12:40 *Species selection for preclinical abuse liability assessment studies*  
Robert L. Balster, Virginia Commonwealth University, Richmond, VA
- 1:05 *Regulatory and PHS policy issues that affect preclinical drug abuse research: How can we avoid regulatory creep?*  
Nancy A. Ator, Johns Hopkins University, Baltimore, MD
- 1:30 *Defending self and science from animal rights terrorists*  
Edyth D. London, University of California, Los Angeles, Los Angeles, CA

### Oral Communications 7

**Regency 1**  
**2:00 - 4:00 PM**

#### OLD DOG, NEW TRICKS: NOVEL TREATMENTS FOR COCAINE DEPENDENCE

Chairs: Sara Jane Ward and Justin J. Anker

- 2:00 *The GLT-1 activator ceftriaxone attenuates behavioral and neurochemical effects of cocaine in rodents*  
S. Ward, B. Rasmussen, G. Corley, C. Henry, J. Kim, E. Walker, S. Rawls, Pharmaceutical Sciences, Temple University, Philadelphia, PA
- 2:15 *Long-term blockade of cocaine seeking in rats treated with a cocaine hydrolase viral vector*  
J. J. Anker, University of Minnesota, Minneapolis, MN
- 2:30 *32,476: A low addictive slow-onset long-acting dopamine transporter inhibitor that inhibits cocaine's actions in rats*  
Z. Xi<sup>1</sup>, X. Li<sup>1</sup>, J. Li<sup>1</sup>, X. Peng<sup>1</sup>, R. Srivastava<sup>1</sup>, M. Froimowitz<sup>2</sup>, E. Gardner<sup>1</sup>, <sup>1</sup>Intramural Research Program, National Institute on Drug Abuse, Baltimore, MD, <sup>2</sup>University of Massachusetts Lowell, Lowell, MA



- 2:45 *The long-acting alpha-1 antagonist, doxazosin, alters cocaine's effects in rats*  
H. Yanli, C. Haile, W. Huang, T. A. Kosten, Psychiatry, Baylor College of Medicine, Houston, TX
- 3:00 *Topiramate for the treatment of comorbid alcohol and cocaine dependence*  
K. M. Kampman, H. M. Pettinati, K. G. Lynch, T. L. Roth, R. L. Liebman, B. J. Paulsen, C. P. O'Brien, Psychiatry, University of Pennsylvania, Philadelphia, PA
- 3:15 *Extended-release mixed amphetamine salts and topiramate increase abstinence rates in cocaine-dependent individuals*  
J. J. Mariani<sup>1,2</sup>, W. Cheng<sup>1</sup>, M. Pavlicova<sup>1</sup>, A. Bisaga<sup>1,2</sup>, E. V. Nunes<sup>1,2</sup>, D. Brooks<sup>2</sup>, F. R. Levin<sup>1,2</sup>, <sup>1</sup>Psychiatry/Division on Substance Abuse, Columbia University, New York, NY, <sup>2</sup>Psychiatry/Division on Substance Abuse, New York State Psychiatric Institute, New York, NY
- 3:30 *Modafinil and d-amphetamine for the treatment of cocaine dependence*  
J. Schmitz<sup>1</sup>, C. Green<sup>1</sup>, F. G. Moeller<sup>1</sup>, D. Herin<sup>2</sup>, J. Grabowski<sup>2</sup>, <sup>1</sup>University of Texas Medical School at Houston, Houston, TX, <sup>2</sup>University of Minnesota, Minneapolis, MN
- 3:45 *A clinical trial of N-acetylcysteine for cocaine dependence*  
S. LaRowe<sup>1,3</sup>, P. W. Kalivas<sup>2</sup>, R. J. Malcolm<sup>1</sup>, <sup>1</sup>Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston, SC, <sup>2</sup>Neurosciences, Medical University of South Carolina, Charleston, SC, <sup>3</sup>Charleston VAMC, Charleston, SC

## Oral Communications 8

**Regency 3**  
**2:00 - 4:00 PM**

### DOUBLE TROUBLE: PSYCHIATRIC COMORBIDITY

Chairs: Staci A. Gruber and Jessica M. Peirce

- 2:00 *Psychological distress and depression / anxiety diagnosis among patients in substance abuse treatment centers in seven countries of Latin America and one in the Caribbean: Policy and program implications*  
E. Merchan-Hamann<sup>1</sup>, L. Basso-Musso<sup>2</sup>, L. Domenech<sup>3</sup>, O. Jones-Willis<sup>4</sup>, O. V. Kulakova<sup>5</sup>, M. G. Wright<sup>7</sup>, E. Vásquez-Espinosa<sup>5</sup>, E. Leal<sup>1</sup>, P. Reid<sup>1</sup>, R. Prieto-López<sup>1</sup>, M. García-Estrada<sup>1</sup>, R. Mann<sup>6</sup>, B. Brands<sup>6</sup>, C. Strike<sup>6</sup>, J. Sapag<sup>6</sup>, <sup>1</sup>Collective Health, University of Brasilia, Brasilia, Brazil, <sup>2</sup>Sch. of Nursing, U. of Valparaíso, Valparaíso, Chile, <sup>3</sup>Fac. Medicine, University of the Republic, Montevideo, Uruguay, <sup>4</sup>Fac. Nursing, U. Panama, Panama, Panama, <sup>5</sup>Fac. Med. Sciences, UNAN - León, León, Nicaragua, <sup>6</sup>International Health, CAMH, Toronto, ON, Canada, <sup>7</sup>CICAD, OAS, Washington, DC
- 2:15 *Life stressors and substance use among Israeli adolescents*  
M. Schiff<sup>1</sup>, R. Pat-Horenczyk<sup>2</sup>, R. Benbenishty<sup>3</sup>, D. Brom<sup>2</sup>, <sup>1</sup>School of Social Work and Social Welfare, Hebrew University, Jerusalem, Israel, <sup>2</sup>Israel Center for the Treatment of Psychotrauma, Herzog Hospital, Jerusalem, Israel, <sup>3</sup>School of Social Work, Bar Ilan University, Ramat Gan, Israel
- 2:30 *Lifetime stress is associated with increased daily use of cocaine and nicotine, and elevated ASI and BDI scores, in cocaine-dependent participants*  
J. J. Mahoney, III, A. Aziziyeh, S. Harrison, T. Newton, R. De La Garza, II, Psychiatry and Behavioral Sciences, Baylor College of Medicine, Houston, TX
- 2:45 *PTSD predicts treatment-seeking and drug use in syringe exchange participants*  
J. M. Peirce, R. K. Brooner, V. L. King, M. S. Kidorf, Johns Hopkins University School of Medicine, Baltimore, MD

- 3:00 *Marijuana and mood: A role in bipolar disorder*  
S. A. Gruber, K. Sagar, M. K. Dahlgren, S. E. Lukas, Cognitive and Clinical Neuroimaging Core, McLean Hospital/Harvard Medical School, Belmont, MA
- 3:15 *Mood/anxiety disorders and their longitudinal association with non-medical prescription opioid use and prescription opioid use disorder*  
S. S. Martins<sup>1</sup>, M. Fenton<sup>2</sup>, K. M. Keyes<sup>2</sup>, C. Blanco<sup>2</sup>, H. Zhou<sup>1</sup>, C. L. Storr<sup>3,1</sup>, <sup>1</sup>Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, <sup>2</sup>Columbia University, New York City, NY, <sup>3</sup>University of Maryland School of Nursing, Baltimore, MD
- 3:30 *Depression and abstinence in effectively treated cocaine dependence with other mental disorders*  
J. B. Milby<sup>1</sup>, K. Crouch<sup>1</sup>, D. Wallace<sup>2</sup>, J. Schumacher<sup>1</sup>, S. Mennemeyer<sup>1</sup>, <sup>1</sup>Univ of Alabama at Birmingham, Birmingham, AL, <sup>2</sup>RTI International, Research Triangle Park, NC
- 3:45 *Searching for a neurobiological basis for self-medication theory in ADHD comorbid with substance use disorders: An in vivo study of dopamine transporters using 99mTc-TRODAT-1 SPECT*  
C. M. Szobot<sup>1</sup>, N. Junior<sup>1</sup>, C. Shih<sup>2</sup>, M. Hoexter<sup>2</sup>, C. Anselmi<sup>1</sup>, F. Pechansky<sup>1</sup>, R. Bressan<sup>2</sup>, L. Rohde<sup>1</sup>, <sup>1</sup>Federal University of Rio Grande do Sul, Porto Alegre, Brazil, <sup>2</sup>Laboratório Interdisciplinar de Neurociências Clínicas (LiNC). Department of Psychiatry, Universidade Federal de São Paulo (UNIFESP), São Paulo, Brazil

## Oral Communications 9

**Diplomat 1-2**  
**2:00 - 4:00 PM**

### DOWN ON THE PHARM: OPIOID PHARMACOLOGY

Chairs: Sharon L. Walsh and Daniel Roche

- 2:00 *Sex differences in HPA axis response to naltrexone: Preliminary evidence for the influence of estradiol*  
D. Roche<sup>1</sup>, H. Kim<sup>2</sup>, A. C. King<sup>1</sup>, <sup>1</sup>Psychiatry, University of Chicago, Chicago, IL, <sup>2</sup>Obstetrics/Gynecology, University of Chicago, Chicago, IL
- 2:15 *Treatment with a glial modulator attenuates opioid tolerance and dependence in opioid-dependent volunteers*  
Z. D. Cooper<sup>1</sup>, K. W. Johnson<sup>2</sup>, S. K. Vosburg<sup>1</sup>, M. A. Sullivan<sup>1</sup>, J. Manubay<sup>1</sup>, D. Martinez<sup>1</sup>, J. D. Jones<sup>1</sup>, P. Saccone<sup>1</sup>, S. D. Comer<sup>1</sup>, <sup>1</sup>Psychiatry, SURC, Columbia University, New York, NY, <sup>2</sup>Medicnova, San Diego, CA
- 2:30 *Effects of the NK-1 antagonist, aprepitant, on response to oxycodone in humans*  
S. L. Walsh<sup>1,2,3</sup>, M. A. Heilig<sup>4</sup>, P. A. Nuzzo<sup>1</sup>, M. R. Lofwall<sup>1,2,3</sup>, <sup>1</sup>Center on Drug and Alcohol Research, University of Kentucky (UK), Lexington, KY, <sup>2</sup>Behavioral Science, UK, Lexington, KY, <sup>3</sup>Psychiatry, UK, Lexington, KY, <sup>4</sup>National Institute on Alcohol Abuse and Alcoholism, Bethesda, MD
- 2:45 *The discriminative stimulus effects of tramadol in drug-experienced humans*  
E. C. Strain, A. N. Duke, G. E. Bigelow, Johns Hopkins University SOM, Baltimore, MD
- 3:00 *Interactions between the serotonin receptor agonist 1-(2,5-dimethoxy-4-methylphenyl)-2-aminopropane (DOM) and heroin: I.v. self administration*  
C. P. France<sup>1,2</sup>, J. X. Li<sup>1</sup>, W. Koek<sup>2,1</sup>, <sup>1</sup>Pharmacology, University of Texas Health Science Center, San Antonio, TX, <sup>2</sup>Psychiatry, University of Texas Health Science Center, San Antonio, TX

- 3:15 *Effects of intra-accumbal  $\Delta$ FosB overexpression on extinction of opiate conditioned place preference*  
G. B. Kaplan<sup>1</sup>, S. C. Heinrichs<sup>1</sup>, K. A. Leite-Morris<sup>1</sup>, V. Vialou<sup>2</sup>, W. Y. Fan<sup>1</sup>,  
E. J. Nestler<sup>2</sup>, Psychiatry, Boston University/VA, Boston, MA, Fishberg  
Dept. of Neuroscience, Mount Sinai Medical Center, New York, NY
- 3:30 *Influence of estrogen on morphine reward*  
L. I. Perrotti, S. A. Morris Bobzean, Psychology, University of Texas at  
Arlington, Arlington, TX
- 3:45 *Functional interaction between HIV-gp120 in the brain and opioid medications*  
K. Benamar, J. Palma, A. Cowan, E. B. Geller, M. W. Adler, CSAR,  
Temple University, School of Medicine, Philadelphia, PA

## **Symposium V**

**Diplomat 4-5**  
**2:00 - 4:00 PM**

### **DRUG-RELATED ATTENTIONAL BIAS AND CUE REACTIVITY: NEUROPSYCHOLOGICAL MECHANISMS AND CLINICAL RELEVANCE**

Chairs: Lee Hogarth and Mohammed Shoaib

- 2:00 *Associative basis of cue effects on intentional drug choice: Implications for the treatment of addiction*  
Lee Hogarth, University of Nottingham, University Park, United Kingdom
- 2:25 *Reliability of modified Stroop and visual probe tasks to assess cognitive biases for smoking-related cues*  
Sally Adams, University of Bristol, Bristol, United Kingdom
- 2:50 *Mechanisms for counteracting drug-related attentional biases and their relevance to abstinence*  
Hugh Garavan, University of Vermont, Burlington, VT
- 3:15 *Responses to drug-related and emotional cues in heroin users: Implications for treatment*  
Dan Lubman, Turning Point Alcohol and Drug Centre, Eastern Health, Monash  
University, Fitzroy, VIC, Australia
- 3:40 *Animal models of drug cue reactivity and their role in developing pharmacotherapies for addiction*  
Mohammed Shoaib, Institute of Neuroscience, Medical School, Newcastle  
University, Newcastle Upon Tyne, United Kingdom

## **President's Lecture**

**Atlantic Ballroom**

*Presentation of the Distinguished Service Award*

**4:15 - 5:15 PM**

to Patrick J. Kennedy by Anna Rose Childress

*We Must Be of One Mind for Research*

Patrick J. Kennedy, Next Chapter LLC, Absecon, NJ

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**Monday, June 20, 2011**

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**Pre- and Post-Doc Networking Event**

**Room 307  
5:30 - 7:00 PM**

**Workshop V**

**Regency 1  
8:00 - 10:00 PM**

**CONTINGENCY MANAGEMENT FOR ADOLESCENT SUBSTANCE  
ABUSE/ SASATE BUSINESS MEETING**

Chairs: Catherine Stanger and Michael L. Dennis

*Family-based contingency management for adolescent substance abuse*

Catherine Stanger, UAMS Center for Addiction Research, Little Rock, AR

*Management principles to develop high-school-based tobacco interventions*

Suchitra Krishnan-Sarin, Yale University School of Medicine, New Haven, CT

*Lessons learned in transporting CM to community-based practitioners*

Michael R. McCart, Medical University of South Carolina, Charleston, NC

*Contingency management interventions: Clinical, research, and dissemination challenges*

Alan J. Budney, UAMS Center for Addiction Research, Little Rock, AZ

*Society of Adolescent Substance Abuse Treatment Effectiveness (SASATE) business meeting*

Michael Dennis, Chestnut Health Systems, Normal, IL

**Workshop VI**

**Regency 3  
8:00 - 10:00 PM**

**CAREER DEVELOPMENT: A PERSPECTIVE FROM JUNIOR AND  
SENIOR RESEARCHERS**

Chairs: Gerald McLaughlin and Scott Chen

**Workshop VII**

**Diplomat 1-2  
8:00 - 10:00 PM**

**NIDA MEDICATIONS DEVELOPMENT WORKSHOP 2011**

Chairs: David McCann and Phil Skolnick

*Abstinence: A new look at an old endpoint*

David McCann, Division of Pharmacotherapies and Medical Consequences of Drug Abuse,  
NIDA, Bethesda, MD

*Medication non-compliance: What can we do about it?*

Phil Skolnick, Division of Pharmacotherapies and Medical Consequences of Drug Abuse,  
NIDA, Bethesda, MD

*What's in the pipeline?*

Jane Acri, Division of Pharmacotherapies and Medical Consequences of Drug Abuse, NIDA,  
Bethesda, MD

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**Monday, June 20, 2011**

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## **Workshop VIII**

**Diplomat 4-5  
8:00 - 10:00 PM**

### **FDA DRAFT GUIDANCE ON TESTING OF THE ABUSE POTENTIAL OF COMPOUNDS – DIALOGUE BETWEEN INDUSTRY AND THE FDA CONTROLLED SUBSTANCE STAFF**

Chairs: Beatriz Rocha and Silvia Calderon

*Navigating through procedural and regulatory aspects described in the FDA draft guidance on abuse potential testing*

Beatriz Rocha, Merck Research Laboratories, Ann Arbor, MI

*Talking with the FDA controlled substance staff about preclinical evaluation of abuse potential issues as indicated in the draft guidance*

Mary Jeanne Kallman, Covance Laboratories Inc., Greenfield, IN

*Talking with the FDA controlled substance staff about design and interpretation of the clinical evaluation of abuse potential of drugs*

Marta Sokolowska, Grunenthal USA, Bedminster, NJ

*Talking with Industry – FDA controlled substance staff feedback*

Silvia Calderon, Food and Drug Administration, Silver Spring, MD

*BADGES MUST BE WORN FOR ALL SESSIONS AND SOCIAL EVENTS*

## NIDA International Forum Poster Session

**Great Hall 5-6 Foyer**  
**8:00 – 10:00 PM**

Chair: Steven W. Gust

### Basic Science

*Disposition of CB1 agonist JWH-018 in the mouse following inhalation of the herbal incense "Buzz"*

D. Amira<sup>1,2</sup>, J.L. Poklis<sup>1</sup>, L.E. Wise<sup>1</sup>, J.M. Wiebelhaus<sup>1</sup>, A. Poklis<sup>1</sup>. <sup>1</sup>Hubert H. Humphrey Fellowship Program and Departments of Pharmacology, Toxicology, and Pathology, Virginia Commonwealth University, United States; <sup>2</sup>Laboratory of Toxicology, Emergency Assistance Center-Tunis, Tunisia

*Changes in the cannabinoid (CB1) receptor expression level and G-protein activation in the kainic acid model of epilepsy*

A. Borsodi<sup>1</sup>, E. Bojnik<sup>1</sup>, E. Turunc<sup>2</sup>, G. Armagan<sup>2</sup>, L. Kanit<sup>2</sup>, S. Benyhe<sup>1</sup>, A. Yalcin<sup>2</sup>. <sup>1</sup>Hungarian Academy of Sciences, Hungary; <sup>2</sup>Ege University, Turkey

*Comparative gene expression profiling analysis of lymphoblastoid cells in heroin addicts*

C.H. Chen<sup>1</sup>, D.L. Liao<sup>2</sup>, M.C. Cheng<sup>3</sup>, S.H. Hsu<sup>1</sup>, C.H. Lai<sup>1</sup>, H.J. Tsai<sup>1</sup>. <sup>1</sup>National Health Research Institutes, Taiwan; <sup>2</sup>Bali Psychiatric Center, Department of Health, Taiwan; <sup>3</sup>Yuli Mental Health Research Center, Yuli Veterans Hospital, Taiwan

*Craving and severity of cannabis dependence modulate brain responses to cannabis cues*

J. Cousijn<sup>1</sup>, A.E. Goudriaan<sup>2</sup>, K.R. Ridderinkhof<sup>1</sup>, W. van den Brink<sup>2</sup>, D.J. Veltman<sup>2</sup>, R.W. Wiers<sup>1</sup>. <sup>1</sup>University of Amsterdam, Netherlands; <sup>2</sup>Academic Medical Centre, Netherlands

*Synergistic analgesic response of a morphine-fentanyl combination: Correlation with mu-opioid receptor internalization*

S. Cruz<sup>1</sup>, A. Silva-Moreno<sup>1</sup>, M. Leon-Olea<sup>2</sup>. <sup>1</sup>Cinvestav, Mexico; <sup>2</sup>National Institute of Psychiatry, Mexico

*Calcium signaling underlying nicotine's suppressive effect on Toll-like receptor 3 and Toll-like receptor 4 pathways*

W.Y. Cui<sup>1</sup>, J. Wang<sup>2</sup>, R. Polanowska-Grabow<sup>2</sup>, J.J. Saucerman<sup>2</sup>, J. Gu<sup>1</sup>, S. Chang<sup>4</sup>, M.D. Li<sup>2</sup>. <sup>1</sup>Peking University, China; <sup>2</sup>Departments of Psychiatry and Neurobehavioral Sciences, Biomedical Engineering, University of Virginia, United States; <sup>4</sup>Institute of NeuroImmune Pharmacology, Seton Hall University, United States

*Neuropharmacological and toxicological effects of inhaling a local Egyptian glue in comparison with toluene in rats*

A. Elkoussi, M. Abdelraheim, M. Shaker. College of Medicine, University of Assiut, Egypt

*Growth-restricted piglets: A natural occurring animal model of intrauterine growth restriction in humans?*

E.T. Gieling, R.E. Nordquist, F.J. van der Staay. Faculty of Veterinary Medicine, Department of Farm Animal Health, Utrecht University, Netherlands; Emotion and

Cognition Program, Netherlands; Rudolf Magnus Institute for Neuroscience, University Medical Center Utrecht, Netherlands

*Neuroimaging heavy cannabis users versus sporadic users and nonusers: Working memory and decisionmaking*

A. Goudriaan<sup>1</sup>, J. Cousijn<sup>1</sup>, L. Porrino<sup>2</sup>, D. Veltman<sup>1</sup>, W. van den Brink<sup>1</sup>, R. Wiers<sup>1</sup>.

<sup>1</sup>Academic Medical Center, University of Amsterdam, Netherlands; <sup>2</sup>Wake Forest University, United States

*Quantitative electroencephalogram and trimensonal personality questionnaire factors in substance abusers*

M.W. Huang<sup>1,2</sup>, P.Y. Lo<sup>2</sup>, Y.T. Chen<sup>3</sup>, K.S. Cheng<sup>2</sup>. <sup>1</sup>Chia-Yi Veterans Hospital, Taiwan;

<sup>2</sup>Institute of Biomedical Engineering, National Cheng Kung University, Taiwan;

<sup>3</sup>Department of Electrical Engineering, Southern Taiwan University, Taiwan

*Transgenic pig models for studying neurodegenerative diseases*

L. Lai, D. Yang, C.E. Wang, B. Zhao, W. Li, Z. Ouyang, Z. Liu, Y. Zhao, H. Yang, N. Fan, J. Song, J. Tian, S.H. Li, X.J. Li. Guangzhou Institutes of Biomedicine and Health, Chinese Academy of Sciences, China; Emory University, United States

*Structural magnetic resonance imaging of piglet brain development from postnatal day 1 through 28*

R.E. Nordquist<sup>1,2,3</sup>, E.C. Zeinstra<sup>1,3</sup>, L. van Dijk<sup>1,3</sup>, K. van der Marel<sup>4</sup>, A. van der Toorn<sup>4</sup>, F.J. van der Staay<sup>1,2,3</sup>, R.M. Dijkhuizen<sup>4</sup>. <sup>1</sup>Emotion and Cognition Response Program, Utrecht University, Netherlands; <sup>2</sup>Rudolf Magnus Institute for Neuroscience, University Medical Center Utrecht, Netherlands; <sup>3</sup>Department of Farm Animal Health, Utrecht University, Netherlands; <sup>4</sup>Image Sciences Institute, University Medical Center Utrecht, Netherlands

*N-acetylcysteine changes glutamate levels in cocaine-dependent subjects: An open-label magnetic resonance spectroscopy study*

L. Schmaal, A.E. Goudriaan, D.J. Veltman, W. van den Brink. Department of Psychiatry, Academic Medical Center, Netherlands

*Searching for a neurobiological basis for self-medication theory in attention deficit/hyperactivity disorder comorbid with substance use disorders: An in vivo study of dopamine transporters using 99mTc-TRODAT-1 SPECT*

C. Szobot<sup>1</sup>, N. Silva Jr.<sup>2,3</sup>, M.C. Shih<sup>4</sup>, M.Q. Hoexter<sup>4</sup>, C.E. Anselmi<sup>2</sup>, F. Pechansky<sup>1</sup>, R.A. Bressan<sup>4</sup>, L.A. Rohde<sup>5</sup>. <sup>1</sup>Federal University of Rio Grande do Sul, Brazil; <sup>2</sup>Laboratory of Nuclear Medicine, Hospital Complex Santa Casa, Brazil; <sup>3</sup>Child and Adolescent Psychiatric Division, Hospital de Clínicas de Porto Alegre, Brazil; <sup>4</sup>Interdisciplinary Laboratory of Neuroimaging and Cognition, Federal University of São Paulo, Brazil; <sup>5</sup>National Institute for Developmental Psychiatry, Brazil



*Association study of the  $\beta$ -arrestin 2 gene (ARRB2) with opioid and cocaine dependence in a European American sample*

M. Vaswani<sup>1,2</sup>, L.M. Ambrose-Lanci<sup>1</sup>, T.K. Clarke<sup>1</sup>, A. Zeng<sup>1</sup>, T.N. Ferraro<sup>1</sup>, F.W. Lohoff<sup>1</sup>, W.H. Berrettini<sup>1</sup>. <sup>1</sup>Center for Neurobiology and Behavior, University of Pennsylvania School of Medicine, United States; <sup>2</sup>All India Institute of Medical Sciences, India

*TCM-9811 may be a potential anti-inflammatory neuroprotective agent to decrease neuron insult from drug abuse*

Y.W. Wang<sup>1</sup>, Y.F. Chen<sup>1</sup>, S.L. Chang<sup>2</sup>. <sup>1</sup>China Medical University, Taiwan; <sup>2</sup>Seton Hall University, United States

*Nicotine modulates expression of dynamin 1 in rat brain and in SH-SY5Y cells*

Q. Xu<sup>1</sup>, M.D. Li<sup>2</sup>. <sup>1</sup>Institute of Biological Science and Bioengineering, Beijing Jiaotong University, China; <sup>2</sup>Department of Psychiatry and Neurobehavioral Sciences, University of Virginia, United States

*Reinforcing effects of cocaine in COMT knockout mice*

E. Zvartau<sup>1</sup>, L. Mus<sup>1</sup>, O. Dravolina<sup>1</sup>, A. Bespalov<sup>1</sup>, M. Käenmäki<sup>2</sup>, R. Talka<sup>2</sup>, O. Salminen<sup>2</sup>, R.K. Tuominen<sup>2</sup>, P.T. Männistö<sup>2</sup>. <sup>1</sup>Valdman Institute of Pharmacology, St. Petersburg Pavlov State Medical University, Russia; <sup>2</sup>Faculty of Pharmacy, University of Helsinki, Finland

## Epidemiology

*Prescription drug abuse trends among school and university students in Gaza (Palestinian Authority)*

M.F. AlAfifi<sup>1</sup>, M. Sakka<sup>2</sup>, R. Afifi<sup>1</sup>. <sup>1</sup>Substance Abuse Research Center, Palestinian Territory; <sup>2</sup>AlAzhar University, Palestinian Territory

*Size estimation of injection drug users in Chiang Mai Province, Northern Thailand, using network scale-up methods*

A. Aramrattana<sup>1</sup>, K. Thaikla<sup>1</sup>, K. Yodreun<sup>2</sup>, S. Wongchai<sup>2</sup>, W. Wongtip<sup>2</sup>, C. Chariyalertsak<sup>2</sup>, S. Wisarurat<sup>2</sup>. <sup>1</sup>Chiang Mai University, Thailand; <sup>2</sup>Chiang Mai Public Health Office, Ministry of Public Health, Thailand

*Are vocational students at high risk for drug use and problem behaviors?*

S. Assanangkornchai. Prince of Songkla University, Thailand

*Consumption of licit and illicit psychoactive drugs and its impact on the educational, family, economic, and legal problems in university students*

F. Bautista-Perez<sup>1</sup>, E.E. Mendoza<sup>2</sup>. <sup>1</sup>Universidad Evangélica de El Salvador, El Salvador; <sup>2</sup>Universidad Capitan General Gerardo Barrios, El Salvador

*Drug-defined crimes among inmates of a city jail in Eastern Visayas, Philippines*

T. Cajano<sup>1</sup>, J. Pascual<sup>2</sup>, I. Escartin<sup>1</sup>. <sup>1</sup>Department of Health, Philippines; <sup>2</sup>University of the Philippines, Philippine General Hospital, Philippines

*Knowledge of sexual practices and beliefs about HIV/AIDS among drug users in a Central America suburban community*

M. Chacón-Ortiz<sup>1</sup>, R. Achi<sup>1</sup>, M. Comerford<sup>2</sup>, K. Barrantes<sup>1</sup>, C. McCoy<sup>2</sup>. <sup>1</sup>Institute of Health Research, University of Costa Rica, Costa Rica; <sup>2</sup>Comprehensive Drug Research Center, University of Miami, United States

*HIV serostatus, knowledge, and injection behaviors among methadone maintenance treatment clients in urban versus rural settings of Kunming, Yunnan*

Y.J. Chang<sup>1</sup>, J. Hsieh<sup>1</sup>, J. Li<sup>2</sup>, Y.I. Hser<sup>1</sup>. <sup>1</sup>University of California, Los Angeles, United States; <sup>2</sup>Yun Nan Institute on Drug Abuse, China

*Level of crime predicts differential mortality risk prior to opioid maintenance treatment*

T. Clausen, A. Bukten. University of Oslo, Norway

*GABRA2 and parental control in relation to adolescent substance use: The TRAILS Study*

H. Creemers<sup>1</sup>, R. Veenstra<sup>2</sup>, F. van Oort<sup>3</sup>, F. Verhulst<sup>3</sup>, W. Vollebergh<sup>4</sup>, H. Ormel<sup>2</sup>, A. Huizink<sup>1</sup>, D. Dick<sup>5</sup>, J. Meyers<sup>5</sup>. <sup>1</sup>University of Amsterdam, Netherlands; <sup>2</sup>University of Groningen, Netherlands; <sup>3</sup>Erasmus Medical Center, Netherlands; <sup>4</sup>Utrecht University, Netherlands; <sup>5</sup>Virginia Commonwealth University, United States

*Epidemiology of coca leaf chewing: Mental health survey evidence from the rural Andean Highlands of Peru, 2008*

V. Cruz<sup>1</sup>, J. Saavedra<sup>1,3</sup>, J.C. Anthony<sup>2</sup>. <sup>1</sup>Office of Epidemiology, Peruvian National Institute of Mental Health, Peru; <sup>2</sup>Michigan State University, United States; <sup>3</sup>Department of Psychiatry, Universidad Peruana Cayetano Heredia, Peru

*The SACENDU Project: Monitoring alcohol and drug abuse trends in South Africa*

S. Dada<sup>1</sup>, A. Plüddemann<sup>1</sup>, A. Bhana<sup>2</sup>, C. Parry<sup>1</sup>. <sup>1</sup>Alcohol and Drug Abuse Research Unit, Medical Research Council, South Africa; <sup>2</sup>Child, Youth, Family and Social Development Program, Human Sciences Research Council, South Africa

*Drug use in rural China*

Q. Deng<sup>1</sup>, Q. Tang<sup>2</sup>, M. Chawarski<sup>3</sup>, R. Schottenfeld<sup>3</sup>, W. Hao<sup>1</sup>. <sup>1</sup>Mental Health Institute of Central South University, China; <sup>2</sup>The Fifth People's Hospital of Nanning, China; <sup>3</sup>Yale University, United States

*Digital screening of psychoactive drugs in Nigeria*

E. Ehikhamenor, H. Obianwu. University of Benin/Savan, Nigeria

*Drug use among Moroccan youth students: MedSPAD national survey*

F. El Omari, J. Toufiq. Arrazi Psychiatric Hospital, Morocco

*Differences in smoking prevalence in the same population when using different surveillance tools in eight countries*

O. El Shahawy<sup>1,2</sup>, L. Haddad<sup>2,3</sup>. <sup>1</sup>General Medical Management, Ain Shams University, Egypt; <sup>2</sup>Institute for Drug and Alcohol Studies, Virginia Commonwealth University, United States; <sup>3</sup>School of Nursing, Virginia Commonwealth University, United States

*Street youth background and its contribution to an injection drug use career*

K. Eritsyan, V. Odinkova, L. Safiullina, M. Rusakova. NGO "Stellit," Russia

*Perceived coercion among individuals who drive under the influence of alcohol and drugs: Testing the "rolling consent" approach applied to a nationwide telephone survey*

S. Faller<sup>1</sup>, J.M. Webster<sup>2</sup>, J. Protas<sup>1</sup>, C. Machado<sup>1</sup>, D.B. Bumaguin<sup>1</sup>, P.V. Duarte<sup>3</sup>, R. De Boni<sup>1</sup>, F. Pechansky<sup>1</sup>. <sup>1</sup>Center for Drug and Alcohol Studies, Federal University of Rio Grande do Sul, Brazil; <sup>2</sup>Center on Drug and Alcohol Research, University of Kentucky, United States; <sup>3</sup>Brazilian National Secretariat for Policies on Drugs, Brazil

*Hepatitis C virus among homeless clients of Health Care for the Homeless primary care*

L. Gelberg<sup>1</sup>, A.J. Strehlow<sup>1</sup>, M.J. Robertson<sup>2</sup>, S. Zerger<sup>3</sup>, C.R. Rongey<sup>4</sup>, L.E. Arangua<sup>1</sup>, E. Farrell<sup>5</sup>, A. O'Sullivan<sup>6</sup>. <sup>1</sup>University of California, Los Angeles, United States; <sup>2</sup>Alcohol Research Group, Public Health Institute, United States; <sup>3</sup>Center for Social Innovation, United States; <sup>4</sup>San Francisco Veterans Affairs Medical Center, University of California, San Francisco, United States; <sup>5</sup>Clinica Family Health Services, United States; <sup>6</sup>Health Care for the Homeless, United States

*Exploring the impact of underage entry into sex work: Associations between underage sex work and HIV/sexually transmitted infections, substance use, and violence in two Mexican border cities*

S. Goldenberg<sup>1</sup>, R. Lozada<sup>2</sup>, H. Staines<sup>3</sup>, A. Vera<sup>1</sup>, D. Abramovitz<sup>1</sup>, T.P. Patterson<sup>1</sup>, A. Raj<sup>4</sup>, S.A. Strathdee<sup>1</sup>. <sup>1</sup>University of California, San Diego, United States; <sup>2</sup>Patronato Pro-COMUSIDA, Mexico; <sup>3</sup>Faculty of Medicines, Autonomous University of the City of Juárez, Mexico; <sup>4</sup>Department of Community Health Sciences, Boston University, United States

*10 years of regional inequalities in deaths by diagnosis of mental and behavioral disorders due to psychoactive substance use: A view of the Brazilian public health data*

V. Gonçalves, S. Faller, D. Benzano, R. De Boni, F. Pechansky. Center for Drug and Alcohol Studies, Federal University of Rio Grande do Sul, Brazil

*Smoking and periodontal disease among patients of the Bethania Clinic of the Social Security System of the Republic of Panama*

G. Gonzalez. Social Security, Panama

*Utility and cost-effectiveness of hepatitis C antiviral therapy for prevention among injecting drug user populations*

M. Hickman<sup>1</sup>, N.K. Martin<sup>1</sup>, P. Vickerman<sup>1</sup>, G.R. Foster<sup>2</sup>, S.J. Hutchinson<sup>3</sup>, D.J. Goldberg<sup>3</sup>. <sup>1</sup>University of Bristol, United Kingdom; <sup>2</sup>Queen Mary, University of London, Barts and the London School of Medicine, United Kingdom; <sup>3</sup>Health Protection Scotland, United Kingdom

*Nonmedical prescription drug use among Israeli school dropouts*

R. Isralowitz<sup>1</sup>, A. Reznik<sup>1</sup>, M. Kron<sup>2</sup>. <sup>1</sup>Regional Alcohol and Drug Abuse Resources Center, Israel; <sup>2</sup>Migal/Lifta Adolescent Drug Treatment Program, Israel

*Preliminary investigation of the AUDIT and DUDIT versus biomarkers of alcohol and drug use among HIV-infected clinic attendees in Cape Town, South Africa*

R. Kader<sup>1</sup>, C. Parry<sup>1</sup>, S. Seedat<sup>2</sup>, R. Koch<sup>3</sup>, L. Rowland<sup>1</sup>, S. Dada<sup>1</sup>. <sup>1</sup>Medical Research Council, South Africa; <sup>2</sup>Department of Psychiatry, University of Stellenbosch, South Africa; <sup>3</sup>Virginia Commonwealth University, United States

*Drug use and sexual behavior of injecting drug users in Indonesia*

O. Kamil<sup>1</sup>, R. Tambunan<sup>1</sup>, H. Erlan<sup>1</sup>, I. Praptoraharjo<sup>2</sup>, I. Irwanto<sup>1</sup>, S. Lenggogeni<sup>1</sup>. <sup>1</sup>HIV/AIDS Research Center, Atma Jaya University, Indonesia; <sup>2</sup>Health Policy Administration Department, University of Illinois, United States

*Perception of drinking, smoking, and narcotic drug use behavior of secondary school students in Thailand, 2009*

D. Kanchanasuwan, S. Assanangkornchai, U. Pattanasattayawong. Prince of Songkla University, Thailand

*Association between alcohol, tobacco, and other drug use and bullying among secondary school students in Nakuru District, Kenya*

M. Kariuki, O.J. Samsom. Egerton University, Kenya

*Correlation between antiretroviral therapy initiation during incarceration and enrollment in HIV care among newly released inmates in Odessa Region, Ukraine*

T. Kiriazova<sup>1</sup>, O. Neduzhko<sup>2</sup>. <sup>1</sup>Future Without AIDS, Ukraine; <sup>2</sup>Odessa Medical University, Ukraine

*Neonatal neurobehavior of New Zealand infants exposed to methamphetamine predicts cognitive development at age 1 year*

L. LaGasse<sup>1</sup>, T. Woudes<sup>2</sup>, M. Hinckley<sup>1</sup>, B.M. Lester<sup>1</sup>, S. Della Gotta<sup>1</sup>. <sup>1</sup>Center for the Study of Children at Risk, Brown Alpert Medical School, Women and Infants Hospital, United States; <sup>2</sup>University of Auckland, New Zealand

*Relationship between social network factors, HIV, and hepatitis C virus among injection drug users in Chennai, India*

C. Latkin<sup>1</sup>, C. Yang<sup>1</sup>, A.K. Srikrishnan<sup>2</sup>, S.S. Solomon<sup>2</sup>, S.H. Mehta<sup>1</sup>, D.D. Celentano<sup>1</sup>, M.S. Kumar<sup>2</sup>, S. Solomon<sup>2</sup>. <sup>1</sup>Bloomberg School of Public Health, Johns Hopkins University, United States; <sup>2</sup>YR Gaitonde Centre for AIDS Research and Education, India

*Does a defense mechanism matter: A preliminary study among substance misusers in Taiwan*

C.H. Lee<sup>1</sup>, S.K. Lin<sup>1</sup>, C.H. Chen<sup>2</sup>, Y.L. Chiu<sup>1</sup>, H.C. Liu<sup>1</sup>. <sup>1</sup>Taipei City Hospital and Psychiatric Center, Taiwan; <sup>2</sup>Taipei Medical University, Shuang-Ho Hospital, Taiwan

*Item response analysis on DSM-IV criteria for alcohol, cannabis, cocaine, and opioids*

K.S. Leung, A.B. Abdallah, L.B. Cottler. Washington University School of Medicine, United States

*Temporal changes of smoking status and motivation among Chinese female heroin-dependent smokers*

L. Li<sup>1</sup>, Y. Liu<sup>1</sup>, Y. Yao<sup>2</sup>, J. Zhao<sup>2</sup>, W. Shen<sup>1</sup>, W. Zhou<sup>1</sup>. <sup>1</sup>Ningbo Addiction Treatment and Research Center, China; <sup>2</sup>Administrative Institute of Education Through Labor of Zhejiang Province, China

*Survey of the HIV-infected who inject opium solution in a border ethnic minority village where it abuts Burma (Myanmar)*

Y. Li<sup>1</sup>, Y.Q. Yang<sup>2</sup>, S.G. Zhang<sup>3</sup>, H.Y. Bi<sup>3</sup>, L. Duo<sup>4</sup>, H. Liu<sup>5</sup>, Hong Li<sup>2,6</sup>. <sup>1</sup>Kunming Medical College, China; <sup>2</sup>Nu Jiang State Center for Disease Control, China; <sup>3</sup>Lusui Center for Disease Control, China; <sup>4</sup>Yunnan Red Cross Hospital, China; <sup>5</sup>Institute of Human Virology, Sun Yat-sen University, China; <sup>6</sup>Yunnan Center for Disease Control and Prevention, China

*Household survey shows increasing cannabis and cocaine use in Bolivia*

R. Lopez. Universidad Mayor de San Andres, Bolivia

*Drug use resilience and its determinants among school adolescents in Bogota, Colombia*

C. Lopez-Quintero, Y. Neumark. Braun School of Public Health and Community Medicine, Hebrew University of Jerusalem, Israel

*Sexual risk behavior in women with substance abuse disorders*

D. Molina<sup>1</sup>, G. Rivero<sup>2</sup>, S. Colina<sup>2</sup>. <sup>1</sup>State Hospital Dr. Pedro Iturbe, Venezuela; <sup>2</sup>Rafael Urdaneta University, Venezuela

*Depression, suicidal behavior, and substance use among high school students in Thailand*

A. Muekthong, S. Assanangkornchai, N. Sam-angsri. Psychiatric Department, Prince of Songkla University, Thailand

*Long-term survival of an historical cohort of drug and alcohol abusers in Barcelona, Spain, 1985–2006*

R. Muga<sup>1,2</sup>, M. Torrens<sup>2,3</sup>, F. Bolao<sup>2,4</sup>, E. Martínez<sup>1</sup>, A. Sanvisens<sup>1</sup>; S. Pérez-Hoyos<sup>5</sup>, G. Vallecillo<sup>2,3</sup>, F. Fonseca<sup>2,3</sup>, D. Fuster<sup>1,2</sup>, J. Tor<sup>1,2</sup>. <sup>1</sup>Hospital Universitari Germans Trias i Pujol, Spain; <sup>2</sup>Universitat Autònoma de Barcelona, Spain; <sup>3</sup>Hospital del Mar, Spain; <sup>4</sup>Hospital Universitari de Bellvitge, Spain; <sup>5</sup>Universitat de Barcelona, Spain; <sup>5</sup>Hospital Vall d'Hebrón, Spain

*Genetic and environmental contributions to cannabis withdrawal and abuse/dependence in a national adult twin sample*

N. Nat<sup>1</sup>, A. Agrawal<sup>2</sup>, H.E. Creemers<sup>1</sup>, A.C. Huizink<sup>1</sup>, N.G. Martin<sup>3</sup>, M.T. Lynskey<sup>2</sup>.

<sup>1</sup>University of Amsterdam, Netherlands; <sup>2</sup>Washington University School of Medicine, United States; <sup>3</sup>Queensland Institute of Medical Research, Australia

*Seeking online information about drugs/alcohol/tobacco by Jewish and Arab schoolchildren in Israel: Who does, who doesn't, and who wants to?*

Y. Neumark<sup>1</sup>, C. Lopez-Quintero<sup>2</sup>, B. Feldman<sup>2</sup>, L. Flum<sup>2</sup>, R. Shtarkshall<sup>2</sup>. <sup>1</sup>Hebrew University-Hadassah, Israel; <sup>2</sup>Braun School of Public Health and Community Medicine, Hebrew University of Jerusalem, Israel

*Preliminary success from evaluation of a pilot program results in scaling up a methadone maintenance program in Vietnam*

N.T. Nguyen<sup>1</sup>, N.T. Long<sup>2</sup>, P.D. Manh<sup>2</sup>, N.T.M. Tam<sup>2</sup>, N.T. Huynh<sup>2</sup>, T.V. Hoang<sup>1</sup>, T.T.T. Ha<sup>1</sup>, R. Burdon<sup>1</sup>, C. Nguyen<sup>1</sup>, S.J. Mills<sup>1</sup>, P.H. Minh<sup>3</sup>, K. Mulvey<sup>4</sup>, N.T.M. Ngoc<sup>3</sup>, L.T. Giang<sup>5</sup>, V.V. Cong<sup>5</sup>. <sup>1</sup>Family Health International, Vietnam; <sup>2</sup>Vietnam Administration of HIV/AIDS Control, Ministry of Health, Vietnam; <sup>3</sup>United States Agency for International Development, United States; <sup>4</sup>Substance Abuse and Mental Health Services Administration, United States; <sup>5</sup>Provincial HIV/AIDS Center for Prevention and Control, Ho Chi Minh City and Hai Phong, Vietnam

*Correlations of drug use and personal, familial, peer, community, and stress factors among young adults in Vietnam: Differences in males and females*

V.T. Nguyen. Ministry of Labor, Invalids and Social Affairs, Department for Social Vice Prevention, Vietnam

*Persistent versus nonpersistent patterns of marijuana use in adolescents: Are there protective factors that distinguish these subgroups of users?*

A.R. Noto<sup>1</sup>, T. de Castro Amato<sup>1</sup>, S.S. Martins<sup>2</sup>. <sup>1</sup>Federal University of São Paulo, Brazil; <sup>2</sup>Bloomberg School of Public Health, Johns Hopkins University, United States

*Cannabis use and crime among young offenders in a correctional center in south-western Nigeria*

A. Ogunwale. Neuropsychiatric Hospital, Nigeria

*Use of substance and prescription medication among working class females in Lagos, Nigeria*

C. Okonkwo<sup>1</sup>, F. Jinadu<sup>1</sup>, R. Lawal<sup>1</sup>, B. Ola<sup>2</sup>, A. Gabriel<sup>1</sup>, T. Akinola<sup>1</sup>. <sup>1</sup>Federal Neuropsychiatric Hospital, Nigeria; <sup>2</sup>Lagos State University Teaching Hospital, Nigeria

*Rates of experimental and regular substance use in Uruguay boy and girls: Comparison of 2003 and 2009 survey results*

G. Olivera<sup>1,3</sup>, D. Svikis<sup>2</sup>, H. Suarez<sup>3</sup>. <sup>1</sup>Hubert H. Humphrey Fellowship Program, Institute for Drug and Alcohol Studies, Virginia Commonwealth University, United States; <sup>2</sup>Addiction and Women's Health, Advancing Research and Evaluation Program, Virginia Commonwealth University, United States; <sup>3</sup>National Drug Assembly, Presidency of Uruguay, Observatory of Drug Demand Reduction Area, Uruguay

*Alcohol, smoking, and illicit substance use among secondary school students in northeastern Thailand*

S. Paileeklee, B. Jindawong. Faculty of Medicine, Khon Kaen University, Thailand

*Association between post-traumatic stress disorder, sexual risk behaviors, and drug use among Brazilian club drug users*

G. Pasa<sup>1</sup>, L. Remy<sup>1</sup>, D. Benezano<sup>1</sup>, S. Kurtz<sup>2</sup>, H. Surratt<sup>2</sup>, F. Pechansky<sup>1</sup>. <sup>1</sup>Center for Drug and Alcohol Studies, Federal University of Rio Grande do Sul, Brazil; <sup>2</sup>Center for Drug and Alcohol Studies, University of Delaware–Florida, United States

*Rapid assessment and response of drug use and HIV in Thailand: Songkhla Province*

U. Pattanasattayavong, S. Assanangkornchai. Faculty of Medicine, Prince of Songkla University, Thailand

*Age of sexual initiation, psychiatric symptoms, and sexual risk behavior among ecstasy and LSD users in Porto Alegre, Brazil: A preliminary analysis*

F. Pechansky<sup>1</sup>, L. Remy<sup>1</sup>, H. Surratt<sup>2</sup>, T. Botter<sup>1</sup>, M. Rocha<sup>1</sup>, L. Von Diemen<sup>1</sup>, D.B. Bumaguin<sup>1</sup>, J.A. Inciardi<sup>2</sup>. <sup>1</sup>Center for Drug and Alcohol Studies, Federal University of Rio Grande do Sul, Brazil; <sup>2</sup>Center for Drug and Alcohol Studies, University of Delaware–Florida, United States

*Amphetamine-type stimulant use and sexually transmitted infection risk behavior among young people in Vientiane Capital and Vientiane Province, Lao People's Democratic Republic*

C. Phimpachanh<sup>1</sup>, S. Menorath<sup>2</sup>, V. Sychareun<sup>2</sup>, S. Manivong<sup>1</sup>, A. Phengsavanh<sup>2</sup>, A. Fischer<sup>3</sup>, N. Chanlivong<sup>3</sup>, N. Thomson<sup>4</sup>, B. Santavasy<sup>3</sup>, R. Power<sup>3</sup>. <sup>1</sup>Center for HIV/AIDS and STI, Laos; <sup>2</sup>University of Health Sciences, Laos; <sup>3</sup>Burnet Institute, Australia; <sup>4</sup>Chiang Mai University, Thailand

*A prospective study of methamphetamine use as a predictor of high school nonattendance in Cape Town, South Africa*

A. Pluddemann<sup>1</sup>, A.J. Flisher<sup>2</sup>, R. McKetin<sup>3</sup>, C. Parry<sup>1</sup>, C. Lombard<sup>1</sup>. <sup>1</sup>Medical Research Council of South Africa, South Africa; <sup>2</sup>University of Cape Town, South Africa; <sup>3</sup>University of New South Wales, Australia

*HPA axis reactivity to social stress and adolescent cannabis use: The TRAILS Study*

A. Prince van Leeuwen<sup>1,2</sup>, H.E. Creemers<sup>1,2</sup>, K. Greaves-Lord<sup>2</sup>, F.C. Verhulst<sup>2</sup>, J. Ormel<sup>3</sup>, A.C. Huizink<sup>1,2,4</sup>. <sup>1</sup>Research Institute of Child Development and Education, University of Amsterdam, Netherlands; <sup>2</sup>Department of Child and Adolescent Psychiatry, Erasmus University, Netherlands; <sup>3</sup>Interdisciplinary Center for Psychiatric Epidemiology, University of Groningen, Netherlands; <sup>4</sup>The Netherlands Research Institute for Addiction, Netherlands

*How to find ecstasy users? Adapting methods to sample club drug users in a Brazilian setting*

L. Remy<sup>1</sup>, H. Surratt<sup>2</sup>, S. Kurtz<sup>2</sup>, F. Pechansky<sup>1</sup>. <sup>1</sup>Center for Drug and Alcohol Studies, Federal University of Rio Grande do Sul, Brazil; <sup>2</sup>Center for Drug and Alcohol Studies, University of Delaware–Florida, United States



*Characteristics of heroin abusers enrolled in a methadone maintenance program in metropolitan Barcelona, Spain, 1991–2008*

I. Rivas<sup>1</sup>, E. Faure<sup>1</sup>, E. Martinez<sup>2</sup>, M. Rubio<sup>1</sup>, A. Sanvisens<sup>2</sup>, T. Muñoz<sup>1</sup>, R. Muga<sup>2</sup>.

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*Evidence of preference for higher sucrose solutions in psychoactive substance subjects*

M.A. Rosa<sup>1</sup>, A. Cardoso<sup>1</sup>, J.P. Costa<sup>1</sup>, D. Pires<sup>1</sup>, M. Campos<sup>1</sup>, C. Gomes<sup>1</sup>, S. Slavutzky<sup>2</sup>, F. Kessler<sup>2</sup>, E. Ferreira<sup>1</sup>, F. Pechansky<sup>2</sup>. <sup>1</sup>Federal University of Minas Gerais, Brazil; <sup>2</sup>Federal University of Rio Grande do Sul, Brazil

*HIV prevalence and risk among women drug users in Argentina, Brazil, and Uruguay (1998–2004)*

D. Rossi<sup>1</sup>, G. Ralón<sup>1</sup>, W. Teixeira<sup>2</sup>, F. Bastos<sup>3</sup>, L. Latorre<sup>4</sup>, M. Vila<sup>5</sup>, S. Friedman<sup>6</sup>.

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<sup>4</sup>Instituto de Investigación y Desarrollo Social, Uruguay; <sup>5</sup>Intercambios Civil Association, Argentina; <sup>6</sup>National Development and Research Institutes, United States

*Study on reasons of cross-border HIV infection among Burma's (Myanmar's) injecting drug users in Ruili*

Y. Ruan<sup>1</sup>, L. Duo<sup>2</sup>, Y. Lin<sup>1</sup>, H.M. Xue<sup>2</sup>, L.H. Yang<sup>2</sup>, J.R. Zhong<sup>2</sup>, L. Deng<sup>2</sup>, X. Ji<sup>2</sup>.

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*Drug use patterns among Russian female sex workers*

M. Rusakova, Virginia Commonwealth University, United States; NGO “Stellit,” Russia; St. Petersburg State University, Russia

*Prevalence of illicit substance use among high school students in Thailand*

N. Sam-angsri, S. Assanangkornchai, A. Muekthong, U. Pattanasattayawong. Psychiatric Department, Prince of Songkla University, Thailand

*Increasing drug abuse problems in juveniles in India and opportunities for intervention*

S. Sharma<sup>1</sup>, G. Sharma<sup>2</sup>. <sup>1</sup>Institute of Human Behaviour and Allied Sciences, India;

<sup>2</sup>Safdarjung Hospital, India

*Study of women with concurrent substance use and mental health disorders in Canada*

U. Sharma. Brockville Mental Health Center, Canada

*Trends of shisha (water pipe) use among females in Gaza Strip (Palestine Authority)*

M. Shehada<sup>1</sup>, M. Sakka<sup>2</sup>, R. Afifi<sup>1</sup>. <sup>1</sup>Substance Abuse Research Center, Palestinian Territory; <sup>2</sup>AlAzhar University, Palestine Authority

*Early-onset substance use and risk for use of illicit drugs in Kathmandu, Nepal*

A. Sinha. Bloomberg School of Public Health, Johns Hopkins University, United States

*Initial assessment of risky behaviors among injecting drug users at five methadone clinics in Jakarta, Indonesia*

H. Susami<sup>1</sup>, A. Nurhidayat<sup>1</sup>, D. Utami<sup>1</sup>, R. Sarasvita<sup>2</sup>, M. Chawaski<sup>3</sup>, D. Metzger<sup>4</sup>, G. Woody<sup>4</sup>. <sup>1</sup>Addiction and AIDS Research Center, Indonesia; <sup>2</sup>Indonesia Ministry of Health, Indonesia; <sup>3</sup>Yale University, United States; <sup>4</sup>University of Pennsylvania, United States

*Drug use, voluntary HIV testing, and seroprevalence: Trends over the period 1999–2009 among clients attending a reference drug use treatment center in Rio De Janeiro, Brazil*

P.R. Telles-Dias. State University of Rio de Janeiro, Brazil

*Household survey for size estimation of injecting drug users in Chiang Mai during 2010 using network scale-up methods*

K. Thaikla, A. Aramratana. Research Institute for Health Sciences, Chiang Mai University, Thailand

*Assessing executive function in cocaine-dependent patients using the Autobiographical Episode Interview—an exploratory study*

F. Vallejo Reyes<sup>1</sup>, D. Lewis<sup>2</sup>, P.A. Somoza<sup>2</sup>, E.C. Somoza<sup>2,3</sup>. <sup>1</sup>Pontificia Universidad Católica de Valparaíso, Chile; <sup>2</sup>University of Cincinnati, United States; <sup>3</sup>Cincinnati Veterans Administration Medical Center, United States

*Inhalant abuse among Roma youth in Slovakia: Links with discrimination and marginalization*

P. Vazan. National Development and Research Institutes, United States

*Drug use prevalence and drug use harm estimation among Russian students*

A. Yakovleva<sup>1</sup>, K. Eritsyana<sup>2,3</sup>, O. Levina<sup>2,3</sup>, Z. Bodanovskaya<sup>1,2</sup>, M. Rusakova<sup>1,2</sup>. <sup>1</sup>Sociological Institute of Russian Academy of Science, Russia; <sup>2</sup>NGO “Stellit,” Russia; <sup>3</sup>St. Petersburg State University, Russia

*Prevalence of alcohol, tobacco, and illegal substance use among ninth-grade students in Izmir, Turkey*

U. Yildiz, H. Coskunol, Z. Yuncu, A.E. Altintoprak, C. Aydin. Ege University, Institute on Drug Abuse, Turkey

*Drug-related mortality in the Czech Republic: Novel methods for estimation and their results*

T. Zabransky<sup>1</sup>, V. Mravcik<sup>2</sup>, P. Chomynova<sup>2</sup>. <sup>1</sup>Charles University, Prague, Czech Republic; <sup>2</sup>Czech National Monitoring Centre for Drugs and Drug Addiction, Czech Republic

*Methadone substitution therapy for heroin addiction: A treatment program assessment in Colombia*

M.A. Zapata<sup>1</sup>, L.F. Giraldo<sup>2</sup>. <sup>1</sup>CES University, Colombia; <sup>2</sup>Center of Attention and Integral Rehabilitation of Mental Health, Colombia

*Differences in use patterns of injection stimulants in Ukraine, Czech Republic, and Georgia*

O. Zeziulin<sup>1</sup>, R. Booth<sup>2</sup>, K. Dumchev<sup>3</sup>, T. Zabransky<sup>4</sup>, D. Otiashvili<sup>5</sup>. <sup>1</sup>Vinnitsa Regional Narcological Dispensary, Ukraine; <sup>2</sup>Health Sciences Center, University of Colorado, United States; <sup>3</sup>World Health Organization Country Office, Ukraine; <sup>4</sup>Centre for Addictology, Charles University Prague, Czech Republic; <sup>5</sup>Addiction Research Center, Union Alternative Georgia, Georgia

*Psychological characteristics of Chinese female methamphetamine abusers in compulsory detoxification centers*

W. Zhou<sup>1</sup>, W. Shen<sup>1</sup>, Y. Liu<sup>2</sup>, Y. Zhang<sup>3</sup>, L. Li<sup>1</sup>, Y. Yao<sup>4</sup>, J. Zhao<sup>4</sup>. <sup>1</sup>Laboratory of Behavioral Neuroscience, Ningbo Addiction Research and Treatment Center, China; <sup>2</sup>School of Medicine, Ningbo University, China; <sup>3</sup>Department of Obstetrics and Gynecology, Ningbo First Hospital, China; <sup>4</sup>Administrative Institute of Education Through Labor of Zhejiang Province, China

### Other

*Iraq (Ministry of Health)—U.S. (Substance Abuse and Mental Health Services Administration) collaboration to address the substance abuse problem in Iraq*

R. Aqrawi<sup>1</sup>, W. Mitchell<sup>2</sup>, S. Sadik<sup>3</sup>. <sup>1</sup>Ministry of Health, Iraq; <sup>2</sup>Substance Abuse and Mental Health Services Administration, United States; <sup>3</sup>International Medical Corps, Iraq

*Experiences hosting the joint International Programme in Addiction Studies*

B. Buisman-Pijlman, R. Irvine. The University of Adelaide, Australia

*Asian regional network of addiction clinical researchers workshop*

V.B. Kasinather<sup>1</sup>, R.S. Schottenfeld<sup>2</sup>, M.C. Chawarski<sup>2</sup>, M. Mazlan<sup>1</sup>. <sup>1</sup>Centre for Drug Research, Universiti Sains Malaysia, Malaysia; <sup>2</sup>Yale University School of Medicine, United States

*1-year follow-up of participants in the Virginia Commonwealth University Hubert H. Humphrey Fellowship Program in Substance Abuse Prevention, Treatment, and Policy*

J.R. Koch, L. Leonchuk, R.L. Balster, A. Breland, C. O'Keeffe. Institute for Drug and Alcohol Studies, Virginia Commonwealth University, United States

*Drug research experiences: Multicountry comparison*

C. McCoy<sup>1</sup>, M. Zhao<sup>2</sup>, R. Achi<sup>3</sup>, J. Shultz<sup>1</sup>. <sup>1</sup>University of Miami, United States; <sup>2</sup>Shanghai Jiaotong University School of Medicine, China; <sup>3</sup>University of Costa Rica, Costa Rica

*Health education strategies and policies to reduce drug-related harm among university students: The case of Sweden and Portugal*

L. Serrano<sup>1</sup>, J. Carstensen<sup>2</sup>. <sup>1</sup>Linköping University, Sweden; <sup>2</sup>Division of Health and Society, Department of Medical and Health Sciences, Sweden

*Education of family physicians and nurses on substance abuse in Kosovo*

Z. Tahiri, R. Ismajli, V. Zeqiri. Center for Development of Family Medicine of Kosova, Kosovo

### Prevention

*A disability-adjusted cannabis withdrawal scale reveals withdrawal symptoms associated with relapse*

D. Allsop<sup>1</sup>, M.M. Norberg<sup>1</sup>, A. Budney<sup>2</sup>, J. Copeland<sup>1</sup>. <sup>1</sup>University of New South Wales, Australia; <sup>2</sup>University of Arkansas for Medical Sciences, United States

*Comprehensive community HIV prevention and care among drug users in Myanmar*

H. Aung<sup>1,2</sup>. <sup>1</sup>Hubert H. Humphrey Fellowship Program, Johns Hopkins University, United States; <sup>2</sup>Myanmar Anti-Narcotics Association, Myanmar

*Adolescent cigarette smoking in Mexico: A decisionmaking model for initiation and continuous use*

M. Bermudez-Parsai<sup>1</sup>, B. Nuño-Gutierrez<sup>2</sup>. <sup>1</sup>Arizona State University, United States; <sup>2</sup>Mexican Social Security Institute, University of Guadalajara, Mexico

*Alcohol and drug use among HIV-infected drinkers in Russia*

E. Blokhina<sup>1</sup>, E. Krupitsky<sup>2</sup>, D. Cheng<sup>3</sup>, A. Raj<sup>3</sup>, A. Walley<sup>3</sup>, S. Coleman<sup>3</sup>, C. Bridden<sup>3</sup>, C. Chaisson<sup>3</sup>, J. Samet<sup>3</sup>. <sup>1</sup>St. Petersburg Pavlov State Medical University, Russia; <sup>2</sup>St. Petersburg Bekhterev Psychoneurological Scientific Research Institute, Russia; <sup>3</sup>Schools of Public Health and Medicine, Boston University, United States

*Harm reduction knowledge and practice among prison uniformed personnel in Albania*

A. Boci. STOP AIDS, Albania

*Workplace substance abuse and substance-related HIV prevention programs suitable for a South African setting: A systematic review*

N. Burnhams<sup>1</sup>, A. Musekiwa<sup>1</sup>, C. Parry<sup>1,2</sup>, L. London<sup>3</sup>. <sup>1</sup>Medical Research Council, South Africa; <sup>2</sup>Department of Psychiatry, University of Stellenbosch, South Africa; <sup>3</sup>University of Cape Town, South Africa

*Adaptation of interventions to address alcohol and other drug use, sexual risk behavior, and gender-based violence in Cape Town, South Africa*

T. Carney<sup>1</sup>, W.M. Wechsberg<sup>2</sup>, F.A. Browne<sup>2</sup>, B. Myers<sup>1</sup>, T. Kline<sup>2</sup>. <sup>1</sup>Medical Research Council, South Africa; <sup>2</sup>RTI International, United States

*Reasons for stopping using or not using MDMA (ecstasy) in the electronic music context*

A. Comis, A.R. Noto. Universidad Federal de Sao Paulo, Brazil

*Family and acquaintances of illicit drug users: Community perspectives on laws and public policies in Western Rio De Janeiro, Brazil*

J. Da Silva<sup>1</sup>, B. Brands<sup>2</sup>, E. Adlaf<sup>2</sup>, N. Giesbrecht<sup>2</sup>, L. Simich<sup>2</sup>, M.G.M. Wright<sup>3</sup>. <sup>1</sup>Anna Nery School of Nursing, Federal University of Rio de Janeiro, Brazil; <sup>2</sup>Centre for Addiction and Mental Health, University of Toronto, Canada; <sup>3</sup>Inter-American Drug Abuse Control Commission, Organization of American States, United States

*Implementation of prevention of diseases with crack users in Brazil: Barriers and achievements*

A. Domanico<sup>1</sup>, M. Malta<sup>2</sup>. <sup>1</sup>Núcleo de Estudos Para A Prevencao da AIDS, Brazil; <sup>2</sup>Oswaldo Cruz Foundation, FIOCRUZ, Brazil

*Assessment of development of babies exposed to drugs intrauterine in Brazil*

F. Driemeier<sup>1</sup>, G. Cunha<sup>1,2</sup>, M.L. Zavaschi<sup>2</sup>, J. Dreyer<sup>2</sup>, M.R. Iorra<sup>2</sup>, R. Riesgo<sup>2</sup>. <sup>1</sup>Hospital Materno Infantil Presidente Vargas, Brazil; <sup>2</sup>Center for Drug and Alcohol Research, Federal University of Rio Grande do Sul, Brazil

*Effectiveness of psychosocial intervention for heroin dependence in methadone maintenance treatment in Shanghai*

J. Du, M. Zhao. Shanghai Mental Health Center, Jiaotong University School of Medicine, China

*Gender differences in early age of onset of alcohol and tobacco use as a risk factor*

S. Fernández-Artamendi, J.R. Fernández-Hermida, R. Secades-Villa, G. García-Fernández, O. García-Rodríguez. University of Oviedo, Spain

*Attitudes toward drug dealers and the prevalence of sex with drug dealers among young adult African American females*

L. Floyd. Bloomberg School of Public Health, Johns Hopkins University, United States

*A survey of harm reduction interventions in pharmacies in the Czech Republic*

R. Gabrhelik<sup>1,2</sup>, L. Štátná<sup>2</sup>, M. Miovisky<sup>2</sup>. <sup>1</sup>Bloomberg School of Public Health, Johns Hopkins University, United States; <sup>2</sup>Charles University, Czech Republic

*Secondhand smoke exposure among nonsmoking married women in Jordan*

L. Haddad<sup>1</sup>, S. Al-Zyoud<sup>2</sup>, N.A. Baker<sup>3</sup>, H. Gharaibeh<sup>3</sup>. <sup>1</sup>Virginia Commonwealth University, United States; <sup>2</sup>Hashemite University, Jordan; <sup>3</sup>Jordan University of Science and Technology, Jordan

*Reduction in initiation of injecting drugs in Albania*

E. Hallkaj. STOP AIDS, Albania

*Training needs for combating the HIV/AIDS epidemic in Indonesia*

M. Hidayat<sup>1</sup>, A. Nurhidayat<sup>1</sup>, H. Susami<sup>2</sup>, D. Utami<sup>3</sup>, D. Metzger<sup>4</sup>. <sup>1</sup>Drug Dependence Hospital-RSKO Jakarta, Indonesia; <sup>2</sup>Addiction and AIDS Research Centre, Indonesia; <sup>3</sup>Indonesian HIV/AIDS Counselor Association, Indonesia; <sup>4</sup>University of Pennsylvania, United States

*The first educational materials on tobacco, alcohol, and marijuana for children in Kosovo*

R. Ismajli. Kosova Health Foundation, Kosovo

*Substance abuse among migrant workers of the Thai-Laos border, Thailand*

S. Jaichuang<sup>1</sup>, M. Kanato<sup>2</sup>, A. Ratanasiri<sup>2</sup>. <sup>1</sup>Public Health Office, Ministry of Public Health, Thailand; <sup>2</sup>Khon Kaen University, Thailand

*HIV-1 incidence of injecting drug users in Yuxi Prefecture, Yunnan Province of China*

L.G. Jinxian-Zhao. Yuxi Center for Disease Control and Prevention, China

*Prevalence of substance abuse among residents of Karachi: Reasons and cost of using substances*

L. Khowaja. Aga Khan University, Pakistan

*Consumption patterns and dependence on nicotine, alcohol, and the abuse of drugs in Uganda*

F. Kiwalabye. YCWU, Uganda

*Health-seeking behavior among injecting drug users in Bekasi*

S. Lenggogeni, E. Bong, O. Kamil, L. Hidajat, I. Irwanto. HIV/AIDS Research Center, Atma Jaya University, Indonesia

*Methamphetamine use among HIV-negative drug users in methadone maintenance therapy clinics in Yunnan, China*

H. Liu<sup>1</sup>, L. Duo<sup>2</sup>, C. Wang<sup>1</sup>, J. Zhang<sup>1</sup>, B. Lu<sup>1</sup>, X. Haomin<sup>2</sup>, Y. Chang<sup>3</sup>, X. Shi<sup>4</sup>, J. Cao<sup>1</sup>, M. Song<sup>1</sup>, X. Zhang<sup>1</sup>, H. Li<sup>5</sup>, S. Ivanov<sup>6</sup>, A. Iwamoto<sup>7</sup>. <sup>1</sup>Sun Yat-sen University, China; <sup>2</sup>HIV/AIDS Asia Regional Project, Yunnan Office, China; <sup>3</sup>Yunnan Provincial No 2 People's Hospital, China; <sup>4</sup>Guangzhou Medical University, China; <sup>5</sup>Yunnan Centers for Disease Control and Prevention, China; <sup>6</sup>Bloomberg School of Public Health, Johns Hopkins University, United States; <sup>7</sup>The Institute of Medical Science, University of Tokyo, Japan

*Preventing substance abuse in fetal alcohol spectrum disorder-affected youth*

A. Lynch, S. Nemes, J.N. Karp. Social Solutions International, Inc., United States

*Mixed-methods study on relapse management experiences among peer group counselors for opiate dependence*

M. Maarefvand<sup>1</sup>, H. Ekhtiari<sup>2</sup>, M. Eghlima<sup>1</sup>, A. Deilamizadeh<sup>3</sup>. <sup>1</sup>University of Social Welfare and Rehabilitation, Iran; <sup>2</sup>Iranian National Center for Addiction Studies, Tehran University of Medical Sciences, Iran; <sup>3</sup>Rebirth Charity, Iran

*Amphetamine-type stimulant use and HIV/sexually transmitted infection risk behavior among young female sex workers in Phnom Penh, Cambodia*

L. Maher<sup>1</sup>, P. Phlong<sup>2</sup>, J. Mooney-Somers<sup>1</sup>, S. Keo<sup>3</sup>, E. Stein<sup>4</sup>, M.C. Couture<sup>4</sup>, K. Page<sup>4</sup>. <sup>1</sup>National Centre in HIV Epidemiology and Clinical Research, Australia; <sup>2</sup>Royal University of Fine Arts, Cambodia; <sup>3</sup>Cambodian Women's Development Agency, Cambodia; <sup>4</sup>University of California, San Francisco, United States

*Updated curricula on tobacco, alcohol, and drug use needed for students of high schools of Kosovo*

I. Miftari. Center for Development of Family Medicine of Kosovo, Kosovo

*Risk for HIV infection among injecting drug users and needs assessment for health care services in Kosovo*

D. Muçaj. Hubert H. Humphrey Fellowship Program, Virginia Commonwealth University, United States; Medico-Psychotherapeutic Centre "Labyrinth," Kosovo

*Drug and sexual risk behaviors among impoverished women in Puerto Rico: An exploratory analysis of women living in public housing*

L. Norman, L. Cintron, C. Alvarez. Ponce School of Medicine and Health Sciences, United States

*Smoking as a risk factor for anxiety among hypertensive patients*

M.A. Ojo. Virginia Commonwealth University, United States; Federal Neuropsychiatric Hospital, Nigeria

*Behavioral risks of injection drug users and HIV/AIDS in Nigeria*

A. Onigbanjo-Williams, B. Mancha. Bloomberg School of Public Health, Johns Hopkins University, United States

*Aggression and prenatal stress in pigs*

K. Rutherford, S. Jarvis, R.B. D'Eath, A.B Lawrence. Animal Behaviour and Welfare, Sustainable Livestock Systems, Scottish Agricultural College, Scotland

*Findings from a 3-year follow-up study of the first substance abuse prevention and treatment project at an institute of higher education in Israel*

M. Schori<sup>1</sup>, E. Lawental<sup>2</sup>. <sup>1</sup>School of Social Policy and Practice, University of Pennsylvania, United States; <sup>2</sup>Tel-Hai Academic College, Israel

*Quality of life in crack, cocaine, and other psychoactive substance abusers seeking treatment in four Brazilian capitals*

A.O. Sordi, F. Kreische, F. Pechansky, F. Kessler. Center for Drug and Alcohol Research, Federal University of Rio Grande do Sul, Brazil

*Psychosocial predictors of cannabis abuse among Iranian high school students*

F. Tareman<sup>1</sup>, M.S. Meigooni<sup>2</sup>, A. Jazayeri<sup>3</sup>. <sup>1</sup>Zanjan University of Medical Sciences, Iran; <sup>2</sup>SAMA Tehran High School, Iran; <sup>3</sup>University of Welfare and Rehabilitation Sciences, Iran

*Social demography and behavior patterns of serodiscordant couples in St. Petersburg, Russia*

O. Toussova<sup>1</sup>, Wendee Wechsberg<sup>2</sup>. <sup>1</sup>The Biomedical Center, Russia; <sup>2</sup>RTI International, United States

*What is the impact of hepatitis C virus-related service providing and seeking behaviors among methadone maintenance treatment clinics?*

Z. Wang, J. Du, M. Zhao. Shanghai Mental Health Center, Shanghai Jiao Tong University School of Medicine, China

*A comparative look at psychosocial risk factors associated with female versus male adolescent substance use*

P. Whitehorne-Smith, K.A.D. Morgan, W. De La Haye. University of the West Indies, Jamaica

*Substance use disorders and psychiatric conditions in postpartum women who use methamphetamine: A cross-cultural comparison*

T.A. Woudes<sup>1</sup>, L.L. LaGasse<sup>2</sup>, C. Derauf<sup>3</sup>, E. Newman<sup>4</sup>, L.M. Smith<sup>5,6</sup>, R. Shah<sup>7</sup>, A.M. Arria<sup>8</sup>, S.D. Grotta<sup>2</sup>, T. Wilcox<sup>2</sup>, B.M. Lester<sup>2</sup>. <sup>1</sup>University of Auckland, New Zealand; <sup>2</sup>Warren Alpert Medical School, Brown University, United States; <sup>3</sup>John A. Burns School of Medicine, University of Hawaii, United States; <sup>4</sup>The University of Tulsa, United States; <sup>5</sup>Los Angeles Biomedical Institute at Harbor, University of California, Los Angeles Medical Center, United States; <sup>6</sup>David Geffen School of Medicine, University of California, Los Angeles, United States; <sup>7</sup>Blank Hospital Regional Child Protection Center, Iowa Health, United States; <sup>8</sup>Center for Substance Abuse Research, University of Maryland, United States

## Treatment

*HIV and sexually transmitted diseases' knowledge among patients in substitution therapy in Bucharest, Romania*

A.O. Abagiu<sup>1</sup>, A. Streinu-Cercel<sup>1</sup>, I.C. Fierbinteanu<sup>2</sup>, I.G. Stoica<sup>2</sup>, F. Georgescu<sup>2</sup>, F. Gheorghe<sup>2</sup>, S.C. Popa<sup>2</sup>, E. Cojocaru<sup>2</sup>, V. Leoveanu<sup>1</sup>, A. Koulosousas<sup>2</sup>, E.M. Paris<sup>2</sup>, R. Ianos-Rancovici<sup>2</sup>. <sup>1</sup>National Institute for Infectious Diseases Matei Bals, Romania; <sup>2</sup>Romanian Association Against AIDS, Romania

*Patterns of memory impairments in a sample of active heroin users in Penang, Malaysia*

S.A. Alamdari<sup>1</sup>, V.B. Kasinather<sup>1</sup>, M. Chawarski<sup>2</sup>. <sup>1</sup>Centre for Drug Research, Universiti Sains Malaysia, Malaysia; <sup>2</sup>Yale University, United States

*SUPPORT Study—hepatitis C virus therapy in opioid-dependent, substituted patients in Germany: Are there predictors for high retention?*

S.M. Apelt<sup>1</sup>, M. Nowak<sup>2</sup>, M. Muthwill<sup>2</sup>, P. Sandow<sup>2</sup>, A. Hummel<sup>2</sup>, M. Backmund<sup>2</sup>. <sup>1</sup>Certum Consulting Scientific Research, Germany; <sup>2</sup>Independent Practice, Germany

*Pharmacotherapy with buprenorphine and behavioral therapy for reducing other drug use in opioid-dependent study participants*

M.A. Bardi, M. Hillhouse, W. Ling. Integrated Substance Abuse Programs, University of California, Los Angeles, United States



*Evidence-based multimedia toolkits improve counselor adherence in group counseling with minimal training: Preliminary results*

A. Brooks<sup>1</sup>, G. DiGuseppi<sup>1</sup>, A. Laudet<sup>2</sup>, D. Knoblach<sup>1</sup>, D. Carise<sup>3</sup>, K. Kirby<sup>1</sup>. <sup>1</sup>Treatment Research Institute, United States; <sup>2</sup>National Development and Research Institutes, United States; <sup>3</sup>Phoenix House, United States

*Residential treatment services in west central Mexico: Resources and needs*

O. Campollo<sup>1</sup>, F. Díaz<sup>2</sup>, C.M. Prado<sup>2</sup>, J. Cunningham<sup>3</sup>. <sup>1</sup>University of Guadalajara, Mexico; <sup>2</sup>The State Council Against Addiction in Jalisco, Mexico; <sup>3</sup>University of Arizona, United States

*Methodological issues in studying treatment dose: An example from the National Institute on Drug Abuse Clinical Trials Network*

A. Chakrabarti<sup>1</sup>, M.L. Griffin<sup>2,3</sup>, G.M. Fitzmaurice<sup>2,4</sup>, G.E. Woody<sup>5</sup>, R.D. Weiss<sup>2,3</sup>. <sup>1</sup>Sikkim Manipal Institute of Medical Sciences, India; <sup>2</sup>McLean Hospital, United States; <sup>3</sup>Harvard Medical School, United States; <sup>4</sup>Harvard School of Public Health, United States; <sup>5</sup>Treatment Research Institute, University of Pennsylvania, United States

*Effect of naltrexone and buprenorphine on smoking in opioid-dependent subjects*

B. Chatterjee, R. Jain, S. Jhanjee. All India Institute of Medical Sciences, India

*Randomized controlled trial on the effectiveness of supplemental counseling sessions in the prevention of relapse among patients in compulsory treatment programs for heroin addiction in Shanghai*

H. Chen<sup>1</sup>, W. Ling<sup>2</sup>, M. Hillhouse<sup>2</sup>, M. Zhao<sup>1</sup>. <sup>1</sup>Shanghai Mental Health Center, Jiaotong University School of Medicine, China; <sup>2</sup>Integrated Substance Abuse Programs, University of California, Los Angeles, United States

*Contingency management: Sociodemographic profile, diagnosis, and results of patients seen in a mental health service*

R.A. da Paz. Hubert H. Humphrey Fellowship Program, Virginia Commonwealth University, United States

*Spontaneous recovery from problematic substance abuse among aboriginal peoples in Canada*

C. Dell, A. Tempier. University of Saskatchewan, Canada

*Drug use during pregnancy in South Brazil*

J. Dreyer<sup>1</sup>, G. Cunha<sup>1</sup>, C. Campos<sup>1</sup>, C. Estrela<sup>1</sup>, E. Lança<sup>1</sup>, F. Driemeier<sup>1</sup>, G. Costa<sup>1</sup>, M.L. Zavaschi<sup>2</sup>, M.R. Iorra<sup>1</sup>, R. Riesgo<sup>2</sup>, B. Lester<sup>3</sup>. <sup>1</sup>Hospital Materno Infantil Presidente Vargas, Brazil; <sup>2</sup>Universidade Federal do Rio Grande do Sul, Brazil; <sup>3</sup>Brown Center for Study of Children at Risk, Brown University, United States

*Routine opioid substitution therapy program data document low HIV prevalence among injection drug users in Ukraine*

K. Dumchev<sup>1</sup>, Y. Kobyshcha<sup>1</sup>, S. Dvoryak<sup>2</sup>, O. Chernova<sup>2</sup>, I. Grishayeva<sup>3</sup>, L. Vlasenko<sup>3</sup>, I. Veretko<sup>4</sup>. <sup>1</sup>World Health Organization Country Office, Ukraine; <sup>2</sup>Ukrainian Institute on Public Health Policy, Ukraine; <sup>3</sup>Clinton Health Access Initiative, Ukraine; <sup>4</sup>Vinnitsya Regional Narcological Dispensary, Ukraine

*Four settings of opioid agonist maintenance treatment in Ukraine*

S. Dvoriak. Ukrainian Institute on Public Health Policy, Ukraine

*Treatment outcome predictors in a patient-tailored flexible dose-duration methadone detoxification program*

H. Ekhtiari, A. Dezfouli, B. Zamanian, A. Mokri. Neurocognitive Laboratory, Iranian National Center for Addiction Studies, Tehran University of Medical Sciences, Iran

*Multicentric study on challenges and advantages of using addiction clinic management software with automated dispensing*

M. Faiaznoori, M.S.H. Ekhtiari. Neurocognitive Laboratory, Iranian National Center for Addiction Studies, Tehran University of Medical Sciences, Iran

*Cocaine-dependent patients seeking treatment: Retention and abstinence rates*

F. Fonseca<sup>1</sup>, R. Martínez-Riera<sup>1,2</sup>, D. Martínez-Sanvisens<sup>1,2</sup>, P. Samos<sup>1</sup>, P. Rossi<sup>1,2</sup>, C. Castillo<sup>1,2</sup>, M. Torrens<sup>1,2,3</sup>. <sup>1</sup>Institute of Neuropsychiatry and Addictions, Parc de Salut Mar, Spain; <sup>2</sup>Substance Use Disorders Research Group, Parc de Salut Mar, Spain; <sup>3</sup>Department of Psychiatry, Universitat Autònoma de Barcelona, Spain

*Contingency management for cocaine addicts: Neuropsychological outcomes*

G. García-Fernández, O. García-Rodríguez, R. Secades-Villa, S. Fernández-Artamendi, J.R. Fernández-Hermida. University of Oviedo, Spain

*Is virtual reality the best approach for cue exposure treatment?*

O. García-Rodríguez<sup>1</sup>, I. Pericot-Valverde<sup>2</sup>, M. Ferrer-García<sup>2</sup>, R. Secades-Villa<sup>1</sup>, J. Gutiérrez-Maldonado<sup>2</sup>. <sup>1</sup>University of Oviedo, Spain; <sup>2</sup>University of Barcelona, Spain

*United Nations Office on Drugs and Crime Treatnet II: Working toward evidence-based drug dependence treatment and care—capacity-building cascade: Pre-post assessment and training satisfaction data*

G. Gerra<sup>1</sup>, E. Saenz<sup>1</sup>, G. Campello<sup>1</sup>, A. Busse<sup>1</sup>, S. Ibanez de Benito<sup>2</sup>, S. Karimova<sup>3</sup>, I. Palacios<sup>4</sup>, J. Tomas-Rossello<sup>5</sup>, B. Shaumarov<sup>3</sup>, C. Amghar<sup>1</sup>. <sup>1</sup>United Nations Office on Drugs and Crime—Headquarters, Austria; <sup>2</sup>United Nations Office on Drugs and Crime—East Africa; <sup>3</sup>United Nations Office on Drugs and Crime—Central Asia; <sup>4</sup>United Nations Office on Drugs and Crime—Peru; <sup>5</sup>United Nations Office on Drugs and Crime—South East Asia

*A case-control study of factors associated with drug treatment and rehabilitation completion and success*

R.J. Go, S. Buensalido, J. Chavez, T. Go, M.L. Nitorreda, M.C. Veloso. Ateneo de Manila University, Philippines

*Evaluation of the nonresidential drug court program in Montego Bay, Jamaica*

K. Goulbourne. Western Regional Health Authority, Jamaica

*Dental health status of methadone/buprenorphine maintenance patients in Iran*

H. Hoseyny<sup>1</sup>, S. Momtazi<sup>2</sup>. <sup>1</sup>Garb Health Center, Iran; <sup>2</sup>Zabjan University of Medical Sciences, Iran

*Self-managed change from problematic cannabis use*

J. Howard<sup>1</sup>, J. Copeland<sup>1</sup>, A. Kwong<sup>2</sup>, A. Arcuri<sup>1</sup>. <sup>1</sup>National Cannabis Prevention and Information Centre, Australia; <sup>2</sup>University of New South Wales, Australia

*Feto-maternal outcome of pregnancy in women maintained on methadone but using illicit substances*

J. Igboekwu<sup>1</sup>, Kim Wolff<sup>2</sup>. <sup>1</sup>Ravenswood Medium Secure Hospital, United Kingdom; <sup>2</sup>Institute of Psychiatry, Kings College, United Kingdom

*“Ready or unready?”: Factors related to motivation for change among drug dependents admitted in a government drug treatment and rehabilitation center in metropolitan Manila, Philippines*

M.T. Inigo<sup>1</sup>, J.C. Pascual<sup>2</sup>, C.G. Quinking<sup>2</sup>. <sup>1</sup>Department of Health, Philippines; <sup>2</sup>College of Medicine, University of the Philippines, Philippines

*Medication-assisted treatment—approaches and essential actions for scale-up in the politically unfavorable environment in Ukraine*

Z. Islam, S. Filippovych. International HIV/AIDS Alliance

*Pattern of urinalysis results for patients prescribed with dextropropoxyphene in opioid-dependent subjects: Do patients really comply?*

R. Jain, R.D. Pattanayak. All India Institute of Medical Sciences, India

*Clinical outcome of drug-exposed children at 12 months: A first analysis of a follow-up program in Brazil*

E. Lança<sup>1</sup>, J. Dreyer<sup>1</sup>, G. Cunha<sup>1</sup>, C. Campos<sup>1</sup>, C. Estrela<sup>1</sup>, F. Driemeier<sup>1</sup>, G. Costa<sup>1</sup>, M.L. Zavaschi<sup>2</sup>, M.R. Iorra<sup>1</sup>, R. Riesgo<sup>2</sup>, B. Lester<sup>3</sup>. <sup>1</sup>Hospital Materno Infantil Presidente Vargas, Brazil; <sup>2</sup>Federal University of Rio Grande do Sul, Brazil; <sup>3</sup>Brown Center for Study of Children at Risk, Brown University, United States

*The minipig as an animal model to study antidepressant pharmacology by positive emission tomography*

A.M. Landau, S. Dyve, A. Kristian, O. Alstrup, S. Jakobsen, M. Simonsen, A. Møller, P. Videbech, G. Wegener, A. Gjedde, D.J. Doudet. PET Center, Aarhus University Hospital, Denmark

*Prospective patterns and correlates of quality of life among women in substance abuse treatment*

A. Laudet<sup>1</sup>, M.O. Min<sup>2</sup>, E. Tracy<sup>2</sup>, H. Kim<sup>2</sup>, S. Brown<sup>2</sup>, L. Singer<sup>2</sup>, M.K. Jun<sup>2</sup>. <sup>1</sup>Center for the Study of Addictions and Recovery, National Development and Research Institutes, United States; <sup>2</sup>Case Western Reserve University, United States

*Evaluating the impacts of methadone maintenance treatment on heroin abusers in Taiwan: An 18-month follow-up study*

T.S. Lee. National Taiwan Normal University, Taiwan

*Combined scopolamine and chlorpromazine treatment for heroin dependence: A randomized trial*

S. Liu<sup>1</sup>, W. Zhou<sup>1</sup>, F. Zhang<sup>1</sup>, L. Li<sup>1</sup>, J. Zhang<sup>1</sup>, Q. Wang<sup>2</sup>, D. Gui<sup>1</sup>, Y. Liu<sup>3</sup>, D. Cai<sup>2</sup>, W. Li<sup>1</sup>, Y. Liu<sup>1</sup>, W. Shen<sup>1</sup>. <sup>1</sup>Ningbo Addiction Research and Treatment Center, China; <sup>2</sup>Addiction Treatment Center, Zhejiang Qingchun Hospital, China; <sup>3</sup>Medical School of Ningbo University, China

*Alcohol as a risk factor for intravenous drug users in their remote period of abstinence*

B. Lobodov. Senter "Semya," Russia

*Therapeutic interventions for volatile substance misuse*

S. MacLean<sup>1</sup>, J. Cameron<sup>2</sup>, A. Harney<sup>2</sup>, N. Lee<sup>3,4</sup>. <sup>1</sup>University of Melbourne, Australia; <sup>2</sup>Turning Point Alcohol and Drug Centre, Australia; <sup>3</sup>Psychiatry and Psychological Medicine, Monash University, Australia; <sup>4</sup>National Centre for Education and Training on Addictions, Flinders University, Australia

*Temporal changes in initiation of injection use in heroin users in Malaysia, 1968 to 2010*

M. Mazlan<sup>1</sup>, R. Schottenfeld<sup>2</sup>, M. Chawarski<sup>2</sup>, E. Tejani<sup>2</sup>. <sup>1</sup>Substance Abuse Research Center, Malaysia; <sup>2</sup>Yale University School of Medicine, United States

*Recovery rates of addicts in residential treatment centers*

M.M. Joseph. Kenyatta University, Kenya

*Psychological distress and depression/anxiety diagnosis among patients in substance abuse treatment centers in seven countries of Latin America and one in the Caribbean: Policy and program implications*

E. Merchan-Hamann<sup>1</sup>, E. Leal<sup>2</sup>, L. Basso-Musso<sup>3</sup>, P. Reid<sup>4</sup>, O. Kulakova<sup>5</sup>, E. Vásquez-Espinoza<sup>5</sup>, O. Jones-Willis<sup>6</sup>, R. Prieto-López<sup>7</sup>, D. Domenech<sup>8</sup>, M. García-Estrada<sup>9</sup>, R. Mann<sup>10</sup>, B. Brands<sup>10</sup>, C. Strike<sup>10</sup>, L. Simich<sup>10</sup>, J. Sapag<sup>10</sup>, M.G.M. Wright<sup>11</sup>. <sup>1</sup>University of Brasilia, Brazil; <sup>2</sup>Federal University of Rio de Janeiro, Brazil; <sup>3</sup>University of Valparaiso, Chile; <sup>4</sup>University of the West Indies, Mona Campus, Jamaica; <sup>5</sup>National Autonomous

University of Leon, Nicaragua; <sup>6</sup>University of Panama, Panama; <sup>7</sup>Iberoamerican University, Mexico; <sup>8</sup>University of the Republic, Uruguay; <sup>9</sup>University of San Carlos, Guatemala; <sup>10</sup>Centre for Addiction and Mental Health, University of Toronto, Canada; <sup>11</sup>Inter-American Drug Abuse Control Commission, Organization of American States, United States

*Drug abuse background and mental health status of a sample of methadone/buprenorphine maintenance patients in Iran*

S. Momtazi<sup>1</sup>, N. Musavinasab<sup>1</sup>, B. Daneshvar<sup>2</sup>, A. Moradi<sup>2</sup>, I. Omid<sup>3</sup>. <sup>1</sup>Zanjan University of Medical Sciences and Substance Abuse Prevention and Treatment Office, Iran; <sup>2</sup>Agonsit Treatment Center, Iran; <sup>3</sup>Private Researcher, Canada

*A comparison of buprenorphine taper outcomes between prescription opioid and heroin users*

S. Nielsen, M. Hillhouse, A. Hasson, C. Thomas, W. Ling. Integrated Substance Abuse Programs, University of California, Los Angeles, United States

*Naltrexone plus behavioral intervention compared with usual care: Drug use and HIV risk outcomes in men with drug-free female partners*

D. Otiashvili<sup>1</sup>, I. Kirtadze<sup>1</sup>, K.E. O'Grady<sup>2</sup>, H.E. Jones<sup>3</sup>. <sup>1</sup>Addiction Research Center, Union Alternative Georgia, Georgia; <sup>2</sup>University of Maryland, College Park, United States; <sup>3</sup>RTI International, United States

*Contextualizing drug use in China: Gender differences in family relationship and social network among drug users*

C.Y. Peng<sup>1</sup>, J. Hsieh<sup>1</sup>, J. Li<sup>2</sup>, M. Zhao<sup>3</sup>, Y.I. Hser<sup>1</sup>, R. Rawson<sup>1</sup>. <sup>1</sup>University of California, Los Angeles, United States; <sup>2</sup>Yun Nan Institute on Drug Abuse, China; <sup>3</sup>Shanghai Mental Health Center, Shanghai Jiaotong University School of Medicine, China

*Methadone maintenance and opiate addicts' positive and negative affects in outpatient and in prison treatment programs*

P. Piray, H. Ekhtiari, F. Mirzaei, O. Rezaei, M.A. Ahmadi, A. Mokri. Neurocognitive Laboratory, Iranian National Center for Addiction Studies, Tehran University of Medical Sciences, Iran

*Validation and factor structure of the SOCRATES Questionnaire among substance abusers in a therapeutic community*

C.G. Quinking<sup>1</sup>, M.A. Inigo<sup>2</sup>. <sup>1</sup>School of Medicine, University of the Philippines, Philippines; <sup>2</sup>Department of Health, Philippines

*Impact of inpatient research participation on subsequent heroin use patterns*

P. Roux<sup>1,2</sup>, C. Tindall<sup>1</sup>, J. Murray<sup>1</sup>, S.K. Vosburg<sup>1</sup>, P. Saccone<sup>1</sup>, M.A. Sullivan<sup>1</sup>, J.M. Manubay<sup>1</sup>, Z.D. Cooper<sup>1</sup>, J.D. Jones<sup>1</sup>, R.W. Foltin<sup>1</sup>, S.D. Comer<sup>1</sup>. <sup>1</sup>Substance Use Research Center, Columbia University, United States; <sup>2</sup>French National Institute of Health and Medical Research, France

*An Iranian women's drug clinic: Reports from women about their journey into drugs*

S. Salimi<sup>1</sup>, B. Nassirimanesh<sup>2</sup>, S. Mohsenifar<sup>1</sup>, D. Allsop<sup>3</sup>, A. Mokri<sup>1</sup>, K. Dolan<sup>3</sup>. <sup>1</sup>Iranian National Center for Addiction Studies, Tehran University of Medical Sciences, Iran; <sup>2</sup>University of British Columbia, Canada; <sup>3</sup>National Drug and Alcohol Research Centre, University of New South Wales, Australia

*Client and social characteristics of methadone maintenance treatment in Indonesia*

R. Sarasvita<sup>1</sup>, R. Ali<sup>2</sup>, B. Utomo<sup>3</sup>. <sup>1</sup>Indonesia Ministry of Health, Indonesia; <sup>2</sup>University of Adelaide, Australia; <sup>3</sup>University of Indonesia, Indonesia

*Individual characteristics and response to contingency management treatment for cocaine addiction*

R. Secades-Villa<sup>1</sup>, E. Sánchez-Hervás<sup>2</sup>, O. García-Rodríguez<sup>1</sup>, G.G. Fernandez<sup>1</sup>, S.F. Artamendi<sup>1</sup>, J.R. Fernández-Hermida<sup>1</sup>. <sup>1</sup>University of Oviedo, Spain; <sup>2</sup>Valencia State Health Agency, Spain

*Benzodiazepine use at program admission and treatment outcomes among patients in methadone maintenance treatment programs in Israel*

L. Shabtay<sup>1</sup>, M. Schiff<sup>2</sup>, R. Benbenishty<sup>3</sup>. <sup>1</sup>Association for Public Health, Israel; <sup>2</sup>Hebrew University School of Social Work and Social Welfare, Israel; <sup>3</sup>Bar Ilan University, School of Social Work, Israel

*Feasibility of providing educational counseling for heroin abusers participating in needle-syringe programs*

Z. Shamandi<sup>1</sup>, V.B. Kasinather<sup>1</sup>, M. Chawarski<sup>2</sup>. <sup>1</sup>Centre for Drug Research, Universiti Sains Malaysia, Malaysia; <sup>2</sup>School of Medicine, Yale University, United States

*Creation of a computerized database for the Therapeutic Justice Program in Sao Paulo, Brazil*

M.S. Sobrinho. Hubert H. Humphrey Fellowship Program, Virginia Commonwealth University, United States; Sao Paulo Public Attorney North Area Office, Brazil

*The health-related quality of life for drug abusers test: A validation study of the English version in Australia*

R. Sud<sup>1</sup>, J. Emerson<sup>1</sup>, E. Shafaei<sup>1</sup>, O. Lozano<sup>2</sup>, C. Zubaran<sup>1</sup>. <sup>1</sup>University of Western Sydney, Australia; <sup>2</sup>University of Huelva, Spain

*Association of functional COMT Val108/Met polymorphism with smoking cessation in a randomized, double-blind, and placebo-controlled nicotine replacement therapy trial*

H. Sun<sup>1</sup>, S. Guo<sup>3,4</sup>, D. Chen<sup>5</sup>, F. Yang<sup>1</sup>, Y. Zou<sup>1</sup>, X. Di<sup>1</sup>, Y. Cao<sup>1</sup>, T. Kosten<sup>6</sup>, L. Lu<sup>2</sup>, X.Y. Zhang<sup>1,6</sup>. <sup>1</sup>Beijing Hui-Long-Guan Hospital, China; <sup>2</sup>National Institute on Drug Dependence, Peking University, China; <sup>3</sup>National Drug Treatment Center, Beijing Anding Hospital Affiliated Capital University of Medical Sciences, China; <sup>4</sup>Singapore Institute of Mental Health, Woodbridge Hospital, Singapore; <sup>5</sup>Department of Epidemiology and Statistics, Peking University School of Public Health, China; <sup>6</sup>Department of Psychiatry and Behavioral Sciences, Baylor College of Medicine, United States

*Compulsory drug treatment program in Thailand*

O. Sungkhawanna. Virginia Commonwealth University, United States

*Practices and attitudes of addiction treatment providers in the Russian Federation*

M. Torban<sup>1,2</sup>, R. Heimer<sup>2</sup>, E. Krupitsky<sup>1</sup>, R. Ilyuk<sup>1</sup>. <sup>1</sup>St. Petersburg Bekhterev Psychoneurological Scientific Research Institute, Russia; <sup>2</sup>Yale University School of Public Health, United States

*Efficacy of antidepressants in opioid dependence and implications of comorbid depression: Systematic review and meta-analysis*

M. Torrens<sup>1,2,3</sup>, F. Fonseca<sup>1</sup>, D. Martínez-Sanvisens<sup>1,2</sup>, R. Martínez-Riera<sup>1,2</sup>, P. Rossi<sup>1,2</sup>, C. Castillo<sup>1,2</sup>. <sup>1</sup>Institute of Neuropsychiatry and Addictions, Parc de Salut Mar, Spain; <sup>2</sup>Substance Use Disorders Research Group, Parc de Salut Mar, Spain; <sup>3</sup>Department of Psychiatry, Universitat Autònoma de Barcelona, Spain

*Challenges in implementing methadone services in primary health care and prisons in Jakarta, Indonesia*

D.S. Utami<sup>1</sup>, R. Sarasvita<sup>2</sup>, D. Purwaning<sup>1</sup>, P. Sandy<sup>1</sup>. <sup>1</sup>Drug Dependence Hospital-RSKO Jakarta, Indonesia; <sup>2</sup>Indonesian Ministry of Health, Indonesia

*A brain-imaging study of nicotine-induced dopamine release in cigarette smokers in treatment with bupropion using [11C] raclopride in positron emission tomography*

A. Weinstein<sup>1</sup>, J. Greif<sup>2</sup>, N. Freedman<sup>3</sup>, E. Mishani<sup>3</sup>, A. Weizman<sup>4</sup>, R. Ebstein<sup>5</sup>, R. Chisin<sup>3</sup>, M. Bocher<sup>3</sup>. <sup>1</sup>Hadassah Medical Organization, Israel; <sup>2</sup>Tel Aviv Sourasky Medical Center, Israel; <sup>3</sup>Hadassah Hospital, Israel; <sup>4</sup>Geha Hospital, Israel; <sup>5</sup>Herzog Hospital, Israel

*Impulsive personality traits, affective state, and cognitive performance of heroin-dependent individuals in Guangdong, China*

H. Zeng<sup>1</sup>, T. Lee<sup>2</sup>, M. Chawarski<sup>3</sup>, R. Schottenfeld<sup>3</sup>, X. Wu<sup>1</sup>. <sup>1</sup>Jinan University School of Medicine, China; <sup>2</sup>University of Hong Kong, Hong Kong; <sup>3</sup>Yale University, United States

*Sigma-1 receptor antagonist BD1047 enhances social interaction-induced reallocation of behavior away from cocaine*

G. Zernig, M. Fritz, S. Klement, R. El Rawas, A. Saria. Medical University Innsbruck, Austria

*Contingency management at a methadone maintenance treatment clinic in Shanghai, China*

H. Zhang<sup>1,2</sup>, H. Jiang<sup>3</sup>, J. Du<sup>3</sup>, A. Dong<sup>1</sup>, J. Wang<sup>1</sup>, M. Chawarski<sup>2</sup>, R. Schottenfeld<sup>2</sup>, M. Zhao<sup>3</sup>, Y.I. Hser<sup>4</sup>. <sup>1</sup>Shanghai Yangpu Mental Health Center, China; <sup>2</sup>Yale University, United States; <sup>3</sup>Shanghai Mental Health Center, China; <sup>4</sup>Integrated Substance Abuse Programs, University of California, Los Angeles, United States

*Predicting factors for methadone maintenance treatment retention among heroin-dependent patients in Shanghai, China*

M. Zhao<sup>1</sup>, H. Jiang<sup>1</sup>, J. Du<sup>1</sup>, H. Zhang<sup>2</sup>. <sup>1</sup>Shanghai Mental Health Center, Shanghai Jiao Tong University School of Medicine, China; <sup>2</sup>Shanghai Yangpu District Mental Health Center, China

### Poster Session II

(Breakfast)

Odd-numbered posters manned first hour;

Even-numbered, second hour

Great Hall 3-6

8:00 - 10:00 AM

Set-up time begins Monday 1:00 P.M.

Must be removed by Tuesday 12:00 NOON

#### PROGRAM DESCRIPTION

- 1 *Evolutionary implications for animal models in addiction research*  
E. J. Vallender, C. G. Sweeney, L. M. Ogawa, G. M. Miller, Harvard Medical School - NEPRC, Southborough, MA
- 2 *On-going real time analysis of drug use, mental health problems and health care utilization of veterans vs. non-veterans*  
R. E. Crecelius, S. E. Bradford, A. Ben Abdallah, C. C. O'Leary, C. W. Striley, L. B. Cottler, Psychiatry, Washington University, Saint Louis, MO
- 3 *A programmatic treatment engagement intervention for homeless veterans with co-occurring mental health and substance abuse problems*  
D. Smelson<sup>1,3,2</sup>, A. Kline<sup>4,5</sup>, C. Bruzios<sup>6</sup>, S. Rodrigues<sup>1</sup>, M. Losonczy<sup>4,5</sup>, L. Sawh<sup>1,3</sup>, G. Gonzalez<sup>3</sup>, D. Ziedonis<sup>3</sup>, <sup>1</sup>Edith Nourse Rogers Memorial Veterans Hospital, Bedford, MA, <sup>2</sup>VA National Center on Homelessness Among Veterans, Philadelphia, PA, <sup>3</sup>Psychiatry, University of Massachusetts Medical School, Worcester, MA, <sup>4</sup>VA New Jersey Health Care System, Lyons, NJ, <sup>5</sup>Psychiatry, University of Medicine and Dentistry-Robert Wood Johnson Medical School, New Brunswick, NJ, <sup>6</sup>Rutgers University, New Brunswick, NJ
- 4 *Recent drug behaviors among a sample of HIV-positive adults in Miami, FL*  
C. Spadola, M. Nair, FIU, Miami, FL
- 5 *Adoption of a rapid HIV testing and counseling program facilitates state-wide implementation*  
B. W. Holmes<sup>1</sup>, L. Haynes<sup>2</sup>, J. Korte<sup>2</sup>, K. Brady<sup>2</sup>, <sup>1</sup>NIDA Clinical Trials Network, Lexington Richland Alcohol and Drug Abuse Council, Columbia, SC, <sup>2</sup>Department of Psychiatry, Medical University of South Carolina, Charleston, SC
- 6 *HIV risk reduction counselor training for a randomized clinical trial*  
L. Haynes<sup>1</sup>, T. Matheson<sup>2</sup>, K. Brady<sup>1</sup>, L. Metsch<sup>3</sup>, <sup>1</sup>Medical University of SC, Charleston, SC, <sup>2</sup>San Francisco Dept of Public Health, San Francisco, CA, <sup>3</sup>University of Miami, Miami, FL
- 7 *The Women's Recovery Group Study: Challenges and strategies for therapist training, adherence and subject recruitment in a 2-site group therapy trial*  
S. F. Greenfield<sup>1,2</sup>, G. Bailey<sup>3</sup>, H. Connery<sup>1,2</sup>, M. Crisafulli<sup>1</sup>, C. Freid<sup>1,2</sup>, J. Kaufman<sup>1</sup>, M. Rapoza<sup>3</sup>, J. Rodolico<sup>1,2</sup>, K. Schlebecker<sup>3</sup>, <sup>1</sup>McLean Hospital, Belmont, MA, <sup>2</sup>Harvard Medical School, Boston, MA, <sup>3</sup>SSTAR, Fall River, MA
- 8 *TOWAR: A comprehensive training on women's addiction and recovery for drug courts*  
S. Nemes<sup>1</sup>, N. Messina<sup>2</sup>, B. Kearley<sup>1</sup>, <sup>1</sup>Social Solutions International Inc, Olney, MD, <sup>2</sup>ISAP, UCLA, Los Angeles, CA

BADGES MUST BE WORN FOR ALL SESSIONS AND SOCIAL EVENTS



- 9 *Development of a Native American substance abuse treatment program for inmates in South Dakota*  
M. Baron<sup>1</sup>, A. H. Skinstad<sup>2,3</sup>, E. Goodteacher<sup>4</sup>, W. Dougherty<sup>5</sup>, K. Summers<sup>3</sup>, <sup>1</sup>Educational Administration, University of South Dakota, Vermillion, SD, <sup>2</sup>Dept of Community and Behavioral Health, University of Iowa, College of Public Health, Iowa City, IA, <sup>3</sup>Prairieland ATTC, Iowa City, IA, <sup>4</sup>State Corrections Substance Abuse Program, Yankton, SD, <sup>5</sup>State Corrections Substance Abuse Program, Springfield, SD
- 10 *Issues of diversity in workforce development*  
A. H. Skinstad<sup>1,2</sup>, K. Winters<sup>2</sup>, K. Summers<sup>2</sup>, K. Winters<sup>3</sup>, <sup>1</sup>Dept of Community and Behavioral Health, University of Iowa, College of Public Health, Iowa City, IA, <sup>2</sup>Dept of Psychiatry, University of Minnesota, Minneapolis, MN, <sup>3</sup>Prairieland ATTC, Iowa City, IA
- 11 *UNODC Treatnet II: Working towards evidence-based drug dependence treatment and care. Capacity Building Cascade: Pre-post assessment and training satisfaction data*  
A. Busse<sup>2,1</sup>, G. Gerra<sup>1</sup>, J. Tomas Rossello<sup>3</sup>, E. Saenz<sup>2,1</sup>, G. Campello<sup>2,1</sup>, S. Karimova<sup>5</sup>, S. Ibanez de Benito<sup>4</sup>, I. Palcios<sup>6</sup>, M. R. Stanikzai<sup>7</sup>, B. Shaumaro<sup>5</sup>, C. Amghar<sup>2,1</sup>, 1. Treatnet Mastertrainers<sup>2</sup>, 2. Treatnet Trainers<sup>2</sup>, <sup>1</sup>Drug Prevention and Health Branch, United Nations Office on Drugs and Crime, Vienna, Austria, <sup>2</sup>Prevention, Treatment and Rehabilitation Section, United Nations Office on Drugs and Crime, Vienna, Austria, <sup>3</sup>South East Asia, United Nations Office on Drugs and Crime, Bangkok, Thailand, <sup>4</sup>East Africa, United Nations Office on Drugs and Crime, Nairobi, Kenya, <sup>5</sup>Central Asia, United Nations Office on Drugs and Crime, Tashkent, Uzbekistan, <sup>6</sup>Peru, United Nations Office on Drugs and Crime, Lima, Peru, <sup>7</sup>Afghanistan, United Nations Office on Drugs and Crime, Kabul, Afghanistan
- 12 *The Missouri Screening, Brief Intervention and Referral to Treatment program: Six-month outcomes*  
R. E. Adkins, B. E. Keehn, J. G. Noel, M. G. Hile, D. Cho, R. E. Claus, Behavioral Health Division, MO Institute of Mental Health, St. Louis, MO
- 13 *Addict'prev : A motivational website dedicated to drug use and abuse prevention for students in a French area*  
P. Courty<sup>1,2,4</sup>, A. Gagne<sup>2</sup>, A. Perreve<sup>2</sup>, L. Gerbaud<sup>2,3,4</sup>, <sup>1</sup>SATIS, University Hospital, Clermont Ferrand, France, <sup>2</sup>University Health Prevention Center, Clermont Ferrand, France, <sup>3</sup>Department of Public Health, University Hospital, Clermont Ferrand, France, <sup>4</sup>Paedi EA 4281, IUFM d'Auvergne, Chamalieres, France
- 14 *NIDA CTN Electronic Medical Records Project: Implication of adopting standardized core data elements in health IT systems of drug-abuse treatment providers*  
U. Ghitza<sup>1</sup>, R. Lindblad<sup>2</sup>, R. Gore-Langton<sup>2</sup>, S. Sparenborg<sup>1</sup>, B. Tai<sup>1</sup>, <sup>1</sup>National Institute on Drug Abuse, Bethesda, MD, <sup>2</sup>The EMMES Corporation, Rockville, MD
- 15 *Establishment of inter-observer reliability using the Finnegan neonatal abstinence scoring tool*  
K. D'Apolito, School of Nursing, Vanderbilt University, Nashville, TN
- 16 *Current drug scheduling reviews reported by the Drug Enforcement Administration*  
S. R. Tella, C. Prioleau, M. D. Walker, S. G. Ghosland, C. A. Sannerud, Office of Diversion Control, Drug Enforcement Administration, Springfield, VA
- 17 *Manufacture and analysis of reduced nicotine cigarettes for NIDA Drug Supply Program*  
K. Davis<sup>1</sup>, P. G. Pande<sup>1</sup>, S. Sabharwal<sup>1</sup>, B. Thomas<sup>1</sup>, M. Moynihan<sup>2</sup>, <sup>1</sup>RTI International, RTP, NC, <sup>2</sup>22nd Century Ltd, Williamsville, NY
- 18 *Designer drugs, synthetic cannabinoids and their related products spice, K2 and many others*  
T. L. Boos, D. P. Pressley, M. D. Walker, L. L. Wong, C. M. Sannerud, Office of Diversion Control, Drug Enforcement Administration, Springfield, VA

### DRUG INTERACTIONS

- 19 *Effects of chronic nicotine use on cocaine use*  
J. L. Miner<sup>1,2</sup>, P. V. Roebke<sup>1,2</sup>, D. J. Brooks<sup>1,2</sup>, J. J. Mariani<sup>1,2</sup>, F. R. Levin<sup>1,2</sup>, <sup>1</sup>Substance Abuse, New York State Psychiatric Institute, New York, NY, <sup>2</sup>Psychiatry, Columbia University, New York, NY
- 20 *Impact of cocaine use on methadone and buprenorphine concentrations in HIV-infected and uninfected patients*  
J. M. Tetraault<sup>1</sup>, E. F. McCance-Katz<sup>2</sup>, A. T. Dinh<sup>1</sup>, D. E. Moody<sup>3</sup>, B. Lurie<sup>1</sup>, M. Jackson<sup>1</sup>, D. A. Fiellin<sup>1</sup>, L. E. Sullivan<sup>1</sup>, <sup>1</sup>Internal Medicine, Yale Univ, New Haven, CT, <sup>2</sup>Psychiatry, UCSF, San Francisco, CA, <sup>3</sup>Toxicology, Univ of Utah, Salt Lake City, UT
- 21 *Interaction of alcohol and HIV*  
E. F. McCance-Katz, S. Prathikanti, G. Beatty, J. Arenander, E. Rosenfeld, P. Lum, University of California, San Francisco, San Francisco, CA
- 22 *Acute and residual interactive effects of repeated administration of oral methamphetamine and alcohol in humans*  
M. G. Kirkpatrick<sup>1,2</sup>, E. W. Gunderson<sup>2</sup>, F. R. Levin<sup>2</sup>, R. W. Foltin<sup>2</sup>, C. L. Hart<sup>1,2</sup>, <sup>1</sup>Columbia University, Department of Psychology, New York, NY, <sup>2</sup>Division on Substance Abuse and Department of Psychiatry, Columbia University, New York, NY
- 23 *Heterogeneity in treatment response for cocaine dependence: A Bayesian sub-group analysis incorporating historical data*  
C. E. Green<sup>1,2</sup>, J. Schmitz<sup>2</sup>, J. Lindsay<sup>3</sup>, C. Pedroza<sup>1</sup>, S. Lane<sup>2</sup>, R. Agnelli<sup>4</sup>, K. Kjome<sup>2</sup>, F. Moeller<sup>2</sup>, <sup>1</sup>Pediatrics, UTHSC, Houston, TX, <sup>2</sup>Psychiatry, UTHSC, Houston, TX, <sup>3</sup>Psychiatry, Houston VA, Houston, TX, <sup>4</sup>Technical Support, SAS, Inc., Cary, TX
- 24 *The impact of cocaine vaccine (TA-CD) on opiate use in methadone-maintained, opiate- and cocaine-dependent participants*  
D. I. Shorter<sup>1,2</sup>, J. A. Lindsay<sup>1,2</sup>, J. R. Springer<sup>1</sup>, T. R. Kosten<sup>1,2</sup>, <sup>1</sup>Department of Psychiatry, Houston VAMC, Houston, TX, <sup>2</sup>Menninger Department of Psychiatry, Baylor College of Medicine, Houston, TX
- 25 *Self-administration of cocaine and remifentanyl by monkeys under concurrent access conditions*  
K. Freeman, W. L. Woolverton, Psychiatry and Human Behavior, The University of Mississippi Medical Center, Jackson, MS
- 26 *Dopamine transmission following acute and chronic "speedball" administration*  
L. P. Pattison, S. McIntosh, V. Grinevich, E. A. Budygin, S. E. Hemby, Wake Forest University School of Medicine, Winston Salem, NC
- 27 *Rifampin, but not rifabutin, treatment may be associated with opiate withdrawal in buprenorphine maintenance therapy*  
V. A. Gruber<sup>1</sup>, D. E. Moody<sup>2</sup>, S. Prathikanti<sup>1</sup>, G. Friedland<sup>3</sup>, J. Arenander<sup>1</sup>, P. M. Rainey<sup>4</sup>, E. F. McCance-Katz<sup>1</sup>, <sup>1</sup>University of California, San Francisco, San Francisco, CA, <sup>2</sup>University of Utah, Salt Lake City, UT, <sup>3</sup>Yale University, New Haven, CT, <sup>4</sup>University of Washington, Seattle, WA
- 28 *Nicotine preexposure in adulthood alters the aversive, physiological and reinforcing effects of alcohol*  
J. A. Rinker<sup>1</sup>, E. D. Singley<sup>2</sup>, A. Thorsell<sup>2</sup>, M. Heilig<sup>2</sup>, A. L. Riley<sup>1</sup>, <sup>1</sup>Psychology, American University, Washington, DC, <sup>2</sup>NIAAA/NIH, Bethesda, MD
- 29 *Effects of bupirone on the reinforcing effects of cocaine and cocaine + nicotine polydrug combinations in rhesus monkeys*  
N. Mello, J. Newman, Alcohol and Drug Abuse Research Center, McLean Hospital/Harvard Medical School, Belmont, MA

- 30 *Recreational drugs modulate the discriminative stimulus effects of LSD*  
M. B. Gatch, T. Carbonaro, Pharmacology & Neuroscience, UNT Health Science Center, Fort Worth, TX
- 31 *Novel use of dose equivalence theory to examine cocaine-induced endothelial dysfunction*  
N. Lamarre, T. Parry, R. J. Tallarida, Pharmacology, Temple University School of Medicine, Philadelphia, PA

### STIMULANTS: HUMAN II

- 32 *Individual differences in regional brain activation during a task involving potential monetary loss or gain are associated with striatal dopamine responses to amphetamine*  
S. J. Coates<sup>1</sup>, H. H. Holcomb<sup>2</sup>, J. West<sup>2</sup>, L. Oswald<sup>1</sup>, <sup>1</sup>University of Maryland School of Nursing, Baltimore, MD, <sup>2</sup>University of Maryland School of Medicine, Baltimore, MD
- 33 *Associations between amphetamine-induced dopamine release and real-time impulsive responding*  
L. Oswald<sup>1</sup>, D. F. Wong<sup>2</sup>, G. S. Wand<sup>2</sup>, S. J. Coates<sup>1</sup>, H. Kuwabara<sup>2</sup>, <sup>1</sup>University of Maryland School of Nursing, Baltimore, MD, <sup>2</sup>Johns Hopkins University School of Medicine, Baltimore, MD
- 34 *Risk-taking and impulsivity in methamphetamine-dependent and healthy control participants*  
M. Kohno<sup>1,4</sup>, A. T. Morgan<sup>2</sup>, E. D. London<sup>2,3,4</sup>, <sup>1</sup>Neuroscience IDP, UCLA, Los Angeles, CA, <sup>2</sup>Psychiatry and Biobehavioral Sciences, UCLA, Los Angeles, CA, <sup>3</sup>Molecular and Medical Pharmacology, UCLA, Los Angeles, CA, <sup>4</sup>Brain Research Inst., UCLA, Los Angeles, CA
- 35 *Cigarette smoking as a target for potentiating outcomes for methamphetamine use treatment*  
M. Brensilver, D. Telesca, A. N. Swanson, K. H. Heinzerling, S. J. Shoptaw, UCLA, Los Angeles, CA
- 36 *Methylphenidate increases cigarette smoking in ADHD diagnosed adults*  
F. P. Wagner<sup>1</sup>, A. R. Vansickel<sup>1</sup>, M. M. Poole<sup>1</sup>, W. W. Stoops<sup>1,2</sup>, P. E. Glaser<sup>3</sup>, C. R. Rush<sup>1,2,3</sup>, <sup>1</sup>Behavioral Science, University of Kentucky, Lexington, KY, <sup>2</sup>Psychology, University of Kentucky, Lexington, KY, <sup>3</sup>Psychiatry, University of Kentucky, Lexington, KY
- 37 *Individuals with high attentional bias for cocaine cues and blunted motivation for non-drug rewards may be at risk for long-term cocaine use*  
C. Robinson<sup>1</sup>, S. D. Lane<sup>2</sup>, F. G. Moeller<sup>2</sup>, J. M. Schmitz<sup>2</sup>, A. J. Waters<sup>1</sup>, <sup>1</sup>Department of Medical and Clinical Psychology, Uniformed Services University of the Health Sciences, Washington, DC, <sup>2</sup>Department of Psychiatry and Behavioral Sciences, University of Texas, Houston, TX
- 38 *N-acetyl-cysteine alters drug-cue enhanced subjective effects of smoked methamphetamine in METH-dependent volunteers*  
C. N. Haile, R. DeLaGarza, II, J. J. Mahoney, R. Hawkins, C. S. Nerumalla, S. Mehtani, G. Brown, R. Bennett, T. F. Newton, Psychiatry, Baylor College of Medicine, Houston, TX
- 39 *MDMA-induced increases in blood pressure are not mediated by  $\alpha$ -adrenergic mechanisms and are not due to elevated peripheral vascular resistance*  
J. Mendelson, M. J. Baggott, L. Li, J. R. Coyle, G. P. Galloway, Addiction and Pharmacology, California Pacific Medical Center Research Institute, San Francisco, CA
- 40 *Trajectories of cocaine and blood pressure over 18 years: The CARDIA study*  
S. Kertesz<sup>1,2</sup>, Y. Khodneva<sup>2</sup>, M. Pletcher<sup>3</sup>, J. Schumacher<sup>2</sup>, J. Richman<sup>2</sup>, J. Tucker<sup>2</sup>, <sup>1</sup>Birmingham VA Med Ctr, Birmingham, AL, <sup>2</sup>U. Ala. Birmingham, Birmingham, AL, <sup>3</sup>U. Calif San Francisco, San Francisco, CA

- 41 *HPA axis response to stress predicts distress tolerance among cocaine users*  
J. M. Richards, J. R. Leonard, N. Eshera, J. Herberholz, C. W. Lejuez, S. B. Daughters,  
University of Maryland, College Park, MD
- 42 *Association of bulimia nervosa with treatment outcomes of methamphetamine-dependent adults*  
S. Glasner-Edwards, L. J. Mooney, P. Marinelli-Casey, M. Hillhouse, A. Ang, R. A. Rawson,  
Integrated Substance Abuse Programs, UCLA, Los Angeles, CA
- 43 *Using Facebook to maximize follow-up response rates in a longitudinal study of adults who use methamphetamine*  
F. Bolanos, A. Pham, D. Herbeck, M. Brecht, Integrated Substance Abuse Programs, UCLA,  
Los Angeles, CA
- 44 *Long-term (13-year) outcomes of treatment of methamphetamine use*  
M. Brecht, D. Herbeck, K. Lovinger, Integrated Substance Abuse Programs, UCLA, Los  
Angeles, CA
- 45 *Long-term stable abstinence in adults who used methamphetamine*  
D. Christou, P. Sheaff, A. Raihan, K. Lovinger, D. Herbeck, M. Brecht, Integrated Substance  
Abuse Programs, UCLA, Los Angeles, CA
- 46 *Cocaine-dependent patients seeking treatment: Retention and abstinence rates*  
F. Fonseca<sup>1,2</sup>, R. Martínez-Riera<sup>1,2</sup>, D. Martínez-Sanvisens<sup>1,2</sup>, P. Samos<sup>1</sup>, P. Rossi<sup>1,2</sup>,  
C. Castillo<sup>1,2</sup>, M. Torrens<sup>1,2,3</sup>, <sup>1</sup>Institut de Neuropsiquiatria i Addiccions (INAD), Parc de Salut  
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Program, IMIM-Par de Salut Mar, Barcelona, Spain, <sup>3</sup>Department of Psychiatry, Universitat  
Autònoma de Barcelona, Barcelona, Spain
- 47 *Quality of life in crack, cocaine and other psychoactive substance abusers who seek treatment in four Brazilian capitals*  
F. Pechansky, A. O. Sordi, F. Kreische, F. Kessler, Center for Drug and Alcohol Research,  
Hospital de Clinicas de Porto Alegre, Porto Alegre, Brazil
- 48 *Prospective patterns and correlates of quality of life among women in substance abuse treatment*  
A. Laudet<sup>2</sup>, M. Min<sup>1</sup>, E. Tracy<sup>1</sup>, H. Kim<sup>1</sup>, S. Brown<sup>1</sup>, M. Jun<sup>1</sup>, <sup>1</sup>Mandel School of Applied  
Social Sciences, Case Western Reserve University, Cleveland, OH, <sup>2</sup>NDRI, New York, NY
- 49 *High prevalence of partner violence among HIV-negative, heterosexual, female methamphetamine users*  
J. K. Stockman<sup>1</sup>, S. A. Strathdee<sup>1</sup>, S. J. Semple<sup>2</sup>, M. D. Ulibarri<sup>2</sup>, J. K. Zians<sup>2</sup>, T. L. Patterson<sup>2</sup>,  
<sup>1</sup>Division of Global Public Health, University of California San Diego, La Jolla, CA,  
<sup>2</sup>Psychiatry, University of California San Diego, La Jolla, CA
- 50 *Social exclusion and engagement in risky sexual behavior among female crack cocaine users*  
A. Pickover, C. Kopetz, C. W. Lejuez, Psychology, Center for Addictions, Personality, and  
Emotion Research, University of Maryland, College Park, MD
- 51 *Longitudinal patterns of social networks of women in substance abuse treatment*  
E. Tracy<sup>1</sup>, M. Oh Min<sup>1</sup>, H. Kim<sup>1</sup>, C. McCarty<sup>3</sup>, A. Laudet<sup>2</sup>, S. Brown<sup>1</sup>, M. Jun<sup>1</sup>, <sup>1</sup>Mandel  
School of Applied Social Sciences, Case Western Reserve University, Cleveland, OH, <sup>2</sup>NDRI,  
New York, NY, <sup>3</sup>University of Florida, Gainesville, FL
- 52 *Relationship between overall health and cocaine abstinence in cocaine and alcohol dependence treatment*  
J. G. Plebani, A. R. Leshner, A. B. Lipson, K. M. Kampman, Psychiatry, University of  
Pennsylvania, Philadelphia, PA

- 53 *Health conditions, health status and substance use severity among adults who use methamphetamine*  
K. Lovinger, D. Herbeck, D. Christou, P. Sheaff, M. Brecht, Integrated Substance Abuse Programs, UCLA, Los Angeles, CA
- 54 *Medical care utilization in a methamphetamine-dependent treatment follow-up sample*  
S. M. Schroeder, M. Hillhouse, B. Thornton, W. Ling, Neuropsychiatric Institute, University of California Los Angeles, Los Angeles, CA

### CAFFEINE

- 55 *Characteristics of a sample of caffeine treatment seekers*  
D. P. Evatt<sup>1</sup>, L. M. Juliano<sup>2</sup>, J. Cohen<sup>1</sup>, R. R. Griffiths<sup>1</sup>, <sup>1</sup>Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD, <sup>2</sup>Psychology, American University, Washington, DC
- 56 *PMS symptom severity and daily caffeine consumption in female college students*  
P. Nora<sup>2</sup>, L. Hull<sup>2,3,4</sup>, J. Draper<sup>2,3</sup>, P. Dillon<sup>2,4</sup>, L. Keyser-Marcus<sup>2,3</sup>, A. Sepulveda<sup>2</sup>, E. McGee<sup>3</sup>, B. Perry<sup>1</sup>, D. Svikis<sup>2,3</sup>, <sup>1</sup>VCU, Richmond, VA, <sup>2</sup>AWHARE, VCU, Richmond, VA, <sup>3</sup>Institute for Women's Health, VCU, Richmond, VA, <sup>4</sup>CTSA, VCU, Richmond, VA
- 57 *Caffeine activation of brain stress regions*  
A. J. Morgan<sup>1</sup>, E. Stanley<sup>2</sup>, S. B. Harrod<sup>1</sup>, J. R. Fadel<sup>2</sup>, <sup>1</sup>Psychology, University of South Carolina, Columbia, SC, <sup>2</sup>Pharmacology, Physiology, and Neuroscience, University of South Carolina School of Medicine, Columbia, SC
- 58 *Caffeine alone and in combination with alcohol: Patterns of use and attitudes among U.S. college students*  
M. D. Blank, C. O. Cobb, K. G. Jentink, T. Eissenberg, Psychology, Virginia Commonwealth University, Richmond, VA
- 59 *Caffeinated energy drinks in college students linked to higher levels of alcohol, marijuana and tobacco use*  
L. C. Hull<sup>1,2</sup>, P. M. Dillon<sup>1,2</sup>, M. M. O'Connell<sup>1</sup>, P. Chitnavis<sup>1</sup>, D. S. Svikis<sup>1,2</sup>, <sup>1</sup>IDAS, VCU, Richmond, VA, <sup>2</sup>IWH, VCU, Richmond, VA
- 60 *Evaluating the acute effects produced by smoking caffeinated tobacco in a waterpipe*  
C. O. Cobb<sup>1</sup>, A. Shihadeh<sup>2</sup>, A. R. Vansickel<sup>1</sup>, M. F. Weaver<sup>1</sup>, T. Eissenberg<sup>1</sup>, <sup>1</sup>Virginia Commonwealth University, Richmond, VA, <sup>2</sup>Mechanical Engineering, American University of Beirut, Beirut, Lebanon
- 61 *Effects of smoking on caffeine intake among individuals with and without schizophrenia*  
K. K. Gandhi<sup>1</sup>, J. W. Williams<sup>1</sup>, S. Kumar<sup>1</sup>, N. L. Benowitz<sup>2</sup>, <sup>1</sup>Psychiatry, UMDNJ Robert Wood Johnson Medical School, New Brunswick, NJ, <sup>2</sup>University of California, San Francisco, CA

### SEROTONIN

- 62 *Knockdown of 5-HT<sub>2C</sub> receptor in the nucleus accumbens enhances trait impulsivity and confers enhanced sensitivity to non-drug reward*  
K. A. Cunningham<sup>1,2</sup>, N. C. Anastasio<sup>1,2</sup>, S. J. Stutz<sup>1,2</sup>, R. Sears<sup>3</sup>, R. G. Fox<sup>1,2</sup>, J. D. Hommel<sup>1,2</sup>, T. A. Green<sup>1,2</sup>, R. J. DiLeone<sup>3</sup>, F. G. Moeller<sup>4</sup>, <sup>1</sup>Ctr Addiction Research, UTMB, Galveston, TX, <sup>2</sup>Pharm & Tox, UTMB, Galveston, TX, <sup>3</sup>Psych, Yale University, New Haven, CT, <sup>4</sup>Psych & Behav Sci, UTHSC, Houston, TX

- 63 *Knockdown of serotonin (5-HT) 5-HT<sub>2C</sub> receptor in the nucleus accumbens decreases compulsive cocaine-seeking behavior*  
S. J. Stutz<sup>1,2</sup>, N. C. Anastasio<sup>1,2</sup>, R. Sears<sup>3</sup>, R. G. Fox<sup>1,2</sup>, J. D. Hommel<sup>1,2</sup>, T. A. Green<sup>1,2</sup>, R. J. DiLeone<sup>3</sup>, F. G. Moeller<sup>4</sup>, K. A. Cunningham<sup>1,2</sup>, <sup>1</sup>Ctr Addiction Res, UTMB, Galveston, TX, <sup>2</sup>Pharm & Tox, UTMB, Galveston, TX, <sup>3</sup>Psych, Yale University, New Haven, CT, <sup>4</sup>Psych & Behav Sci, UTHSC, Houston, TX
- 64 *Peptide disruption of the serotonin (5-HT) 5-HT<sub>2C</sub> receptor interaction with protein phosphatase and tensin homologue deleted on chromosome 10 (PTEN) is functionally important to the 5-HT<sub>2CR</sub> signalosome*  
A. G. McGinnis<sup>1,2</sup>, S. E. Swinford<sup>1,2</sup>, N. M. Bremer<sup>1,2</sup>, N. C. Anastasio<sup>1,2</sup>, A. Shavkunov<sup>1,2</sup>, P. K. Seitz<sup>1,2</sup>, A. Agarov<sup>4</sup>, R. L. Veselenak<sup>5</sup>, A. Natarajan<sup>6</sup>, N. Bourne<sup>5</sup>, F. Laezza<sup>1,2</sup>, C. S. Watson<sup>1,3</sup>, S. R. Gilbertson<sup>4</sup>, K. A. Cunningham<sup>1,2</sup>, <sup>1</sup>Ctr Addiction Research, UTMB, Galveston, TX, <sup>2</sup>Pharm & Tox, UTMB, Galveston, TX, <sup>3</sup>Biochem & Mol Bio, UTMB, Galveston, TX, <sup>4</sup>Chem, Univ Houston, Houston, TX, <sup>5</sup>Assay Dvlpmt Serv Div, Galveston Ntl Laboratory, UTMB, Galveston, TX, <sup>6</sup>Eppley Inst Res Cancer & Allied Diseases, Univ Nebraska Med Center, Omaha, NE
- 65 *5-HT<sub>2C</sub> receptor activation attenuates cocaine-induced conditioned place preference and hyperactivity*  
C. Craige, E. M. Unterwald, Pharmacology, Center for Substance Abuse Research, Temple University School of Medicine, Philadelphia, PA
- 66 *Repeated intermittent treatment with the selective 5-HT<sub>2C</sub>R agonist Way 163909 produces behavioral tolerance to its acute hypomotive effects*  
L. H. Fink<sup>1,2</sup>, S. J. Stutz<sup>1,2</sup>, K. A. Cunningham<sup>1,2</sup>, <sup>1</sup>Center for Addiction Research, University of Texas Medical Branch, Galveston, TX, <sup>2</sup>Dept of Pharm & Tox, University of Texas Medical Branch, Galveston, TX
- 67 *A functionally selective serotonin 2 receptor ligand for drug-induced psychoses and schizophrenia*  
C. Canal, D. Morgan, R. Booth, University of Florida, Gainesville, FL
- 68 *Characterization of the extracellular vestibule of the human serotonin transporter*  
L. M. Geffert<sup>1</sup>, Y. Huang<sup>1</sup>, T. L. Nolan<sup>1,2</sup>, M. Indarte<sup>2</sup>, S. Manepalli<sup>2</sup>, J. D. Madura<sup>2</sup>, C. K. Surratt<sup>1</sup>, <sup>1</sup>Pharmaceutical Sciences, Duquesne University, Pittsburgh, PA, <sup>2</sup>Chemistry and Biochemistry, Duquesne University, Pittsburgh, PA
- 69 *The serotonin (5-HT) and estrogen receptor systems dynamically interact to regulate serotonin transporter activity*  
J. Guptarak<sup>1,3</sup>, N. M. Bremer<sup>1,2</sup>, P. K. Seitz<sup>1,2</sup>, K. A. Cunningham<sup>1,2</sup>, C. S. Watson<sup>1,3</sup>, <sup>1</sup>Ctr Addiction Research, UTMB, Galveston, TX, <sup>2</sup>Pharm & Tox, UTMB Galveston, Galveston, TX, <sup>3</sup>Biochem & Molec Bio, UTMB, Galveston, TX

**STIMULANTS: ANIMALS I**

- 70 *Methamphetamine produces contrasting effects in neurodevelopmental gene expression in adolescent and adult mice: Relevance to adolescent addiction?*  
B. K. Madras<sup>1,2</sup>, E. Vallender<sup>1</sup>, G. Miller<sup>1</sup>, <sup>1</sup>Psychiatry, Harvard Medical School, Southborough, MA, <sup>2</sup>Psychiatry, Massachusetts General Hospital, Boston, MA
- 71 *Reversible and cell-type specific in vivo silencing of CNS neurons using ivermectin-gated chloride channels*  
C. E. Bass<sup>1</sup>, P. M. Fuller<sup>2</sup>, <sup>1</sup>Physiology and Pharmacology, Wake Forest University Health Sciences, Winston Salem, NC, <sup>2</sup>Neurology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA

- 72 *Further validation of “neurochemical fingerprinting” to characterize drugs with different presynaptic dopaminergic mechanisms: Comparison with in vivo microdialysis*  
S. P. Vickers, M. Prow, S. C. Cheetham, D. J. Heal, Renasci Consultancy, Nottingham, United Kingdom
- 73 *Identification of “partial” substrates for the biogenic amine transporters*  
R. B. Rothman<sup>1</sup>, C. L. Lightfoot-Siordia<sup>1</sup>, B. E. Blough<sup>2</sup>, J. S. Partilla<sup>1</sup>, <sup>1</sup>Clinical Psychopharmacology Section, IRP, NIDA, NIH, Baltimore, MD, <sup>2</sup>Chemistry and Life Sciences Group, Research Triangle Institute International, Research Triangle Park, NC
- 74 *D2 receptor partial agonists: Defining the association between intrinsic efficacy and reinforcing properties in monkeys*  
D. J. Heal<sup>3</sup>, A. C. McCreary<sup>1</sup>, K. B. Freeman<sup>2</sup>, B. V. Woolverton<sup>2</sup>, <sup>1</sup>Abbott Healthcare Products BV, Weesp, Netherlands, <sup>2</sup>University of Mississippi Medical Center, Jackson, MO, <sup>3</sup>RenaSci Consultancy Ltd, Nottingham, United Kingdom
- 75 *The reinforcing and discriminative stimulus effects of the (+)-(2S,3S)-hydroxymetabolite of bupropion in rhesus monkeys and mice*  
P. M. Beardsley, Pharmacology & Toxicology, Virginia Commonwealth University, Richmond, VA
- 76 *Neural regulation of the time course for cocaine cue extinction consolidation*  
J. J. Szalay<sup>1</sup>, A. B. Hodges<sup>2</sup>, K. M. Kantak<sup>1</sup>, <sup>1</sup>Psychol and Grad Prog for Neurosci, Boston Univ, Boston, MA, <sup>2</sup>Morgan State Univ., Baltimore, MD
- 77 *Region-specific changes in zif268 mRNA following cocaine self-administration, abstinence, and extinction training*  
R. M. Bastle<sup>1</sup>, E. D. Dickey<sup>1</sup>, K. J. Thiel<sup>1</sup>, N. S. Pentkowski<sup>1,2</sup>, R. P. Hammer, Jr.<sup>1,3</sup>, J. L. Neisewander<sup>2</sup>, <sup>1</sup>Psychology, Arizona State University, Tempe, AZ, <sup>2</sup>School of Life Sciences, Arizona State University, Tempe, AZ, <sup>3</sup>Basic Medical Sciences, University of Arizona-College of Medicine, Phoenix, AZ
- 78 *The effects of amphetamine on working memory in rats exposed to the drug in adolescence compared to adulthood*  
L. Sherrill<sup>1</sup>, A. Sharma<sup>1</sup>, A. McClory<sup>1</sup>, M. Kang<sup>1</sup>, B. Obomanu<sup>1</sup>, J. M. Gulley<sup>1,2</sup>, <sup>1</sup>Psych, Univ of Illinois, Urbana-Champaign, Champaign, IL, <sup>2</sup>Neurosci Prog, Univ Illinois, Champaign, IL
- 79 *Adolescent amphetamine exposure alters performance in medial prefrontal cortex sensitive tasks*  
E. R. Venheim<sup>1</sup>, J. M. Gulley<sup>1,2</sup>, <sup>1</sup>Psychology, Univ. Illinois, Urbana-Champaign, Champaign, IL, <sup>2</sup>Neuroscience Program, Univ. Illinois, Urbana-Champaign, Champaign, IL
- 80 *Armodafinil and other cognitive enhancers increase extracellular norepinephrine and dopamine in rat prefrontal cortex*  
J. R. Sink<sup>1</sup>, M. A. Ayestas<sup>1</sup>, T. E. Prisinzano<sup>2</sup>, R. B. Rothman<sup>1</sup>, M. H. Baumann<sup>1</sup>, <sup>1</sup>Translational Pharmacology Sect., IRP, NIDA, NIH, Baltimore, MD, <sup>2</sup>Dept. of Medicinal Chemistry, University of Kansas, Lawrence, KS
- 81 *Dopaminergic regulation of risky decision-making*  
N. Simon<sup>1</sup>, M. R. Mitchell<sup>2</sup>, R. P. Haberman<sup>3</sup>, J. L. Bizon<sup>2</sup>, B. Setlow<sup>2</sup>, <sup>1</sup>University of Pittsburgh, Pittsburgh, PA, <sup>2</sup>University of Florida, Gainesville, FL, <sup>3</sup>The Johns Hopkins University, Baltimore, MD
- 82 *Adolescent risk-taking and cocaine self-administration*  
M. R. Mitchell, B. Setlow, Psychiatry, University of Florida, College of Medicine, Gainesville, FL
- 83 *Wheel running affects escalation of cocaine intake in adolescent and adult female rats*  
N. Zlebnik<sup>1,2</sup>, J. J. Anker<sup>1</sup>, A. T. Saykao<sup>1</sup>, M. E. Carroll<sup>1</sup>, <sup>1</sup>Psychiatry, Univ of MN, Minneapolis, MN, <sup>2</sup>Grad. Prog. in Neuroscience, Univ of MN, Minneapolis, MN

- 84 *Sensory reinforcement as a predictor of cocaine self-administration in rats*  
A. M. Gancarz, M. A. Kausch, M. Robble, L. J. Beyley, D. R. Lloyd, J. B. Richards, Research Institute on Addictions, State University of New York at Buffalo, Buffalo, NY
- 85 *Locomotor activity and behavioral stereotypy during an escalating-dose “binge” pattern of cocaine administration in C57BL/6J mice*  
J. Rabkin, S. D. Schlussman, Y. Zhang, M. J. Kreek, Rockefeller University, New York, NY
- 86 *Behavioral and neurocognitive effects of low, escalating doses of methamphetamine administration*  
D. Morgan, M. Guidi, J. D. Mitzelfelt, M. S. Gold, F. H. Kobaissy, Psychiatry, University of Florida, Gainesville, FL
- 87 *Self-administration of 4-methylmethcathinone (mephedrone; ‘meow meow’) in Wistar and Sprague-Dawley rats*  
S. M. Aarde, S. A. Vandewater, K. Creehan, B. Vaillencourt, M. J. Wright, M. A. Taffe, CNAD, The Scripps Research Institute, La Jolla, CA
- 88 *Behavioral profiling of stimulants after acute administration in rats using LABORAS™*  
T. Wolinsky, L. Quinn, D. Virley, V. Castagné, P. Moser, Porsolt, Boulogne-Billancourt, France
- 89 *Differences in environmental enrichment predict self-administration of a low unit dose of methylphenidate in rats*  
C. D. Gipson<sup>1</sup>, J. A. Marusich<sup>2</sup>, K. M. Alvers<sup>3</sup>, M. T. Bardo<sup>3</sup>, <sup>1</sup>Neurosciences, Medical University of South Carolina, Charleston, SC, <sup>2</sup>Pharmacology and Toxicology, Research Triangle Institute, Research Triangle Park, NC, <sup>3</sup>Psychology, University of Kentucky, Lexington, KY
- 90 *Effect of environmental enrichment on behavioral phenotypes and methamphetamine self-administration in rats*  
Y. Liu, X. Lv, L. Zhang, C. Zhao, Ningbo University, Ningbo, China
- 91 *Social and environmental enrichment differentially alter MDMA-induced locomotor activity in male and female adolescent rats*  
J. Matos, A. K. Starosciak, M. Stagg, S. Khokhawalla, S. Izenwasser, Psychiatry & Behavioral Sciences, U Miami Sch Medicine, Miami, FL
- 92 *Social and environmental enrichment alter the effects of MDMA on cocaine conditioned place preference in male adolescent rats*  
A. K. Starosciak, M. Stagg, J. Matos, S. Khokhawalla, S. Izenwasser, Psychiatry & Behavioral Sciences, Univ Miami Sch Medicine, Miami, FL
- 93 *Stress-induced reinstatement of conditioned place preference induced by MDMA or cocaine in adolescent mice*  
A. Vidal-Infer, M. Daza-Losada, M. A. Aguilar, J. Minarro, M. M. Rodriguez-Arias, Psychobiology, School of Psychology, Valencia, Spain
- 94 *Early methylphenidate treatment differentially affects conditioned and unconditioned cocaine activity*  
C. A. Crawford, J. D. Johnson, V. Rios, J. M. Valentine, L. R. Horn, V. Y. Greenfield, Psychology, California State University, San Bernardino, San Bernardino, CA
- 95 *Priming effects of dopamine D1 receptor agonist on the reinstatement of amphetamine-induced conditioned place preference*  
R. Liao<sup>1,2</sup>, Y. Chang<sup>1</sup>, F. Yang<sup>1</sup>, Y. Shen<sup>1</sup>, <sup>1</sup>Department of Psychology, National Cheng-Chi University, Taipei, Taiwan, <sup>2</sup>Institute of Neuroscience, National Cheng-Chi University, Taipei, Taiwan



- 96 *Neuropeptide Y decreases the expression of cocaine-induced conditioned place preference in rats*  
M. Suarez<sup>1</sup>, J. M. DiPirro<sup>3</sup>, A. C. Thompson<sup>2</sup>, <sup>1</sup>Psychol, Univ at Buffalo, Buffalo, NY, <sup>2</sup>Res  
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Buffalo, NY

### ADOLESCENTS I

- 97 *Examining the factor structure of a behavioral economic demand curve measure of nicotine reinforcement in adolescent smokers*  
L. Bidwell<sup>1,2</sup>, J. MacKillop<sup>3</sup>, J. G. Murphy<sup>4</sup>, J. W. Tidey<sup>1,2</sup>, S. M. Colby<sup>1,2</sup>, <sup>1</sup>Department of  
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Addiction Studies, Brown University, Providence, RI, <sup>3</sup>Department of Psychology, University  
of Athens Georgia, Athens, GA, <sup>4</sup>Department of Psychology, University of Memphis,  
Memphis, TN
- 98 *Parental monitoring and delay discounting: Associated risk factors for adolescent cigarette smoking*  
S. Thamocharan<sup>1</sup>, L. Huynh<sup>2</sup>, M. Patak<sup>3</sup>, S. Fields<sup>1</sup>, P. Pirie<sup>2</sup>, B. Reynolds<sup>3,4</sup>, <sup>1</sup>Psychology, Texas  
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State University, Columbus, OH, <sup>3</sup>Research Institute, Nationwide Children's Hospital,  
Columbus, OH, <sup>4</sup>Pediatrics, The Ohio State University, Columbus, OH
- 99 *Relationship between weight status and delay discounting in a sample of adolescent cigarette smokers*  
S. Fields<sup>1</sup>, M. Sabet<sup>2</sup>, A. Peal<sup>2</sup>, B. Reynolds<sup>2,3</sup>, <sup>1</sup>Psychology, Texas A&M University, College  
Station, TX, <sup>2</sup>Research Institute, Nationwide Children's Hospital, Columbus, OH, <sup>3</sup>Pediatrics,  
The Ohio State University, Columbus, OH
- 100 *Gender differences in early age of onset of alcohol and tobacco use as a risk factor*  
S. Fernandez-Artamendi, J. R. Fernández-Hermida, R. Secades-Villa, G. García-Fernández,  
O. García-Rodríguez, Department of Psychology, University of Oviedo, Oviedo, Spain
- 101 *Pregnant by age 15 and substance use initiation among U.S. adolescent females*  
P. Cavazos, M. Schootman, M. Krauss, E. Spitznagel, L. Cottler, L. Bierut, Washington  
University School of Medicine, St. Louis, MO
- 102 *Relationship between pubertal development and alcohol expectation in late childhood*  
C. Chen<sup>1,4</sup>, C. Storr<sup>2</sup>, Y. Chen<sup>1</sup>, Y. Lin<sup>1</sup>, W. Chen<sup>3</sup>, K. Lin<sup>4</sup>, <sup>1</sup>Public Health, National Yang-Ming  
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Nursing, Baltimore, MD, <sup>3</sup>Public Health, National Taiwan University, Taipei, Taiwan, <sup>4</sup>National  
Health Research Institutes, Mioli, Taiwan
- 103 *Onset of abstinence in adolescents treated for marijuana and alcohol use disorders*  
P. C. Brown, A. Budney, C. Stanger, J. Thostenson, E. Williams, Psychiatric Research Institute,  
Center for Addiction Research, University of Arkansas for Medical Sciences, Little Rock, AR
- 104 *Pubertal status as a predictor of increased risk-taking on a laboratory task*  
A. Collado-Rodriguez, K. Young, A. Tyson, L. MacPherson, C. W. Lejuez, University of  
Maryland - College Park, College Park, MD
- 105 *Acute effects of exercise on risk-taking in a sample of adolescent males*  
A. C. Black, M. I. Rosen, Psychiatry, Yale University, West Haven, CT
- 106 *An examination of predictors of family and individual treatment attendance among substance-abusing adolescent runaways*  
N. Slesnick, G. Erdem, J. Collins, D. Bantchevska, H. Katafiasz, The Ohio State University,  
Columbus, OH

- 107 *Deviant socialization mediates transmissible and contextual risk of cannabis use disorder development: A prospective study*  
L. Kirisci, R. Tarter, T. Ridenour, School of Pharmacy, University of Pittsburgh, Pittsburgh, PA
- 108 *Sex, age, and symptom-associated changes in brain metabolites of young marijuana users*  
C. Cloak, L. Chang, T. Ernst, JABSOM, Univ of Hawaii, Honolulu, HI
- 109 *Sex differences in marijuana use among urban African-American adolescents*  
E. S. Bandstra<sup>1</sup>, V. H. Accornero<sup>1</sup>, L. Xue<sup>1</sup>, E. Mansoor<sup>1</sup>, M. S. Glavach<sup>1</sup>, C. E. Morrow<sup>1</sup>, J. C. Anthony<sup>2</sup>, <sup>1</sup>Pediatrics, University of Miami Miller School of Medicine, Miami, FL, <sup>2</sup>Epidemiology, Michigan State University, East Lansing, MI
- 110 *Modeling the association of transmissible risk, sexual maturation and peer affiliation on the development of cannabis use disorder: A longitudinal study*  
M. S. Horner<sup>1</sup>, R. E. Tarter<sup>2</sup>, L. Kirisci<sup>2</sup>, <sup>1</sup>School of Medicine, University of Pittsburgh, Pittsburgh, PA, <sup>2</sup>Pharmaceutical Sciences, University of Pittsburgh, Pittsburgh, PA
- 111 *HPA axis reactivity to social stress and adolescent cannabis use: The TRAILS Study*  
A. Prince van Leeuwen<sup>1,2</sup>, H. E. Creemers<sup>1,2</sup>, K. Greaves-Lord<sup>2</sup>, F. C. Verhulst<sup>2</sup>, J. Ormel<sup>3</sup>, A. C. Huizink<sup>1,2,4</sup>, <sup>1</sup>Research Institute of Child Development and Education, University of Amsterdam, Amsterdam, Netherlands, <sup>2</sup>Department of Child and Adolescent Psychiatry, Erasmus University Medical Center Sophia Children's Hospital, Rotterdam, Erasmus MC, Rotterdam, Netherlands, <sup>3</sup>Interdisciplinary Center for Psychiatric Epidemiology, Department of Psychiatry, University Medical Center Groningen and University of Groningen, Groningen, Netherlands, <sup>4</sup>The Netherlands, Research Institute for Addiction (IVO), Rotterdam, Netherlands
- 112 *The marijuana-mood association during early-mid adolescence*  
V. H. Accornero<sup>1</sup>, J. C. Anthony<sup>2</sup>, L. Xue<sup>1</sup>, E. Mansoor<sup>1</sup>, M. S. Glavach<sup>1</sup>, E. S. Bandstra<sup>1</sup>, <sup>1</sup>Pediatrics, University of Miami Miller School of Medicine, Miami, FL, <sup>2</sup>Epidemiology, Michigan State University, East Lansing, MI
- 113 *Distress tolerance and negative mood regulation expectancies predict adolescent smoking self-change efforts*  
J. R. Dahne, K. Geisel, B. Dubose, K. C. Young, W. F. Schreiber, L. MacPherson, Psychology, University of Maryland, College Park, College Park, MD
- 114 *Estimating treatment effects in the presence of differential follow-up between groups*  
B. Griffin, R. Ramchand, D. McCaffrey, S. Hunter, A. Morral, RAND Corporation, Arlington, VA
- 115 *Observed therapist behaviors and their effects on adolescent and family outcomes in Functional Family Therapy for adolescent substance abuse*  
T. J. Ozechowski, H. B. Waldron, Center for Family and Adolescent Research, Oregon Research Institute, Albuquerque, NM

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- 116 *Multi-level predictors of relationship power among drug-involved women*  
A. Campbell<sup>1</sup>, S. Tross<sup>1</sup>, M. Hu<sup>2</sup>, M. Pavlicova<sup>2</sup>, E. V. Nunes<sup>1</sup>, <sup>1</sup>New York State Psychiatric Institute, Columbia University, New York, NY, <sup>2</sup>Columbia University Mailman School of Public Health, New York, NY
- 117 *Knowledge of HIV transmission through breast milk among drug-dependent pregnant women*  
J. B. Zur, E. Dunne, W. Latimer, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

- 118 *WITHDRAWN*
- 119 *HIV risk behaviors and intervention efficacy in drug abuse treatment trials*  
J. E. Korte<sup>1</sup>, T. Killeen<sup>1</sup>, K. Magruder<sup>2,1</sup>, S. Sonne<sup>1</sup>, K. T. Brady<sup>1,2</sup>, <sup>1</sup>Medical University of South Carolina, Charleston, SC, <sup>2</sup>Ralph H. Johnson VA Medical Center, Charleston, SC
- 120 *Relationships between infection-related knowledge, opinions, expertise, and training among clinicians in addiction treatment*  
L. S. Brown, S. A. Kritz, M. Lin, R. Zavala, T. Charles, Medical Services, Research and Information Technology, Addiction Research and Treatment Corporation, Brooklyn, NY
- 121 *Implementation of an electronic information system to enhance practice at an opioid treatment program: Study design & preliminary assessment of quality and risk management*  
S. A. Kritz, M. Lin, R. Zavala, L. S. Brown, Medical Services, Research and Information Technology, Addiction Research and Treatment Corporation, Brooklyn, NY
- 122 *Predictors of discussing HIV testing with customers among pharmacy staff registered in the New York State Expanded Syringe Access Program: Preliminary findings from the PHARM-HIV study*  
S. Amesty<sup>1,2</sup>, S. Blaney<sup>3</sup>, A. Rivera<sup>4</sup>, D. Ompad<sup>3</sup>, C. Fuller<sup>4</sup>, <sup>1</sup>Center for Family Medicine, Columbia University, New York, NY, <sup>2</sup>Department of Population and Family Health, Columbia University, Mailman School of Public Health, New York, NY, <sup>3</sup>Center for Urban Epidemiologic Studies, New York Academy of Medicine, New York, NY, <sup>4</sup>Department of Epidemiology, Columbia University, Mailman School of Public Health, New York, NY
- 123 *Predictors of Lost-to-Care vs. engaged status among urban HIV clinic patients*  
A. Pecoraro, G. E. Woody, Psychiatry, University of Pennsylvania, Philadelphia, PA
- 124 *Homelessness and injection drug use among a community-based cohort of injection drug users in Baltimore, MD, 2005-2009*  
S. L. Linton, J. Astemborski, G. D. Kirk, S. H. Mehta, Epidemiology, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD
- 125 *Alcohol and drug use among HIV-infected drinkers in Russia*  
E. A. Blokhina<sup>1</sup>, E. M. Krupitsky<sup>1,4</sup>, D. M. Cheng<sup>3</sup>, A. Ray<sup>3</sup>, A. Y. Walley<sup>2</sup>, S. Coleman<sup>3</sup>, C. Bridden<sup>2</sup>, C. Chaisson<sup>3</sup>, J. H. Samet<sup>2,3</sup>, <sup>1</sup>St. Petersburg Pavlov State Medical University, Saint-Petersburg, Russian Federation, <sup>2</sup>Section of General Internal Medicine, Boston University School of Medicine, Boston, MA, <sup>3</sup>Boston University School of Public Health, Boston, MA, <sup>4</sup>St. Petersburg Psychoneurological Scientific Research Institute named after Bekhterev, Saint-Petersburg, Russian Federation
- 126 *Risk factors for non-fatal overdose among HIV-infected Russians with heavy alcohol use*  
A. Y. Walley<sup>1</sup>, D. M. Cheng<sup>2</sup>, E. Krupitsky<sup>3</sup>, A. Raj<sup>2</sup>, E. Blokhina<sup>3</sup>, S. Coleman<sup>2</sup>, C. Bridden<sup>1</sup>, C. Chaisson<sup>2</sup>, J. Samet<sup>1,2</sup>, <sup>1</sup>Boston University School of Medicine, Boston, MA, <sup>2</sup>Boston University School of Public Health, Boston, MA, <sup>3</sup>St. Petersburg State Pavlov Medical University, St. Petersburg, Russian Federation
- 127 *Medication diversion among HIV-positive substance abusers in Miami*  
H. Surratt<sup>1</sup>, S. P. Kurtz<sup>1</sup>, T. J. Cicero<sup>2</sup>, <sup>1</sup>University of Delaware, Coral Gables, FL, <sup>2</sup>Washington University, St. Louis, MO
- 128 *Marijuana use among HIV patients*  
B. McClatchey, C. Arfken, L. Zeman, C. Christensen, J. Cohn, D. Johnson, M. K. Greenwald, Wayne State University, Detroit, MI
- 129 *Cocaine, methamphetamine, alcohol and marijuana enhances HIV infection and disease progression: Role of neurotoxin arachidonic acid*  
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- 130 *Frequency of and response to witnessed overdoses among drug users*  
A. S. Bohnert<sup>1,2</sup>, M. Tracy<sup>1,3</sup>, S. Galea<sup>3</sup>, <sup>1</sup>University of Michigan, Ann Arbor, MI, <sup>2</sup>Dept of Veterans Affairs, Ann Arbor, MI, <sup>3</sup>Epidemiology, Columbia University, New York, NY
- 131 *Prevalence of substance use: A comparison of adult American Indians of the Northern Plains to the National Household Survey on Drug Abuse*  
V. O'Keefe<sup>1,2</sup>, J. Gossage<sup>2</sup>, K. Venner<sup>2,1</sup>, P. May<sup>2</sup>, R. Falcon<sup>1</sup>, <sup>1</sup>Psychology, University of New Mexico, Albuquerque, NM, <sup>2</sup>Center on Alcoholism, Substance Abuse, and Addictions (CASAA), Albuquerque, NM
- 132 *The epidemiology of coca leaf chewing: Mental health survey evidence from the rural Andean highlands of Peru, 2008*  
V. Cruz<sup>1,2</sup>, J. Saavedra<sup>2,3</sup>, J. Anthony<sup>1</sup>, <sup>1</sup>Epidemiology, Michigan State University, East Lansing, MI, <sup>2</sup>Epidemiology, Peruvian National Institute of Mental Health, Lima, Peru, <sup>3</sup>Psychiatry, Universidad Peruana Cayetano Heredia, Lima, Peru
- 133 *Ten years of regional inequalities in deaths by diagnosis of mental and behavioral disorders due to psychoactive substance use: A view of the Brazilian public health data*  
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- 134 *Defining types of opioid and cocaine users based on Latent Class Analysis*  
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- 135 *Drug prevalence results from the 2007 U.S. national roadside survey*  
J. Lacey<sup>1</sup>, T. Kelley-Baker<sup>1</sup>, R. Voas<sup>1</sup>, E. Romano<sup>1</sup>, C. Moore<sup>2</sup>, R. Compton<sup>3</sup>, A. Berning<sup>3</sup>, <sup>1</sup>ALPS, Pacific Institute for Research and Evaluation, Calverton, MD, <sup>2</sup>Immunalysis Corporation, Pomona, CA, <sup>3</sup>National Highway Traffic Safety Administration, Washington, DC
- 136 *Perceived coercion among individuals who drive under the influence of alcohol and drugs: Testing the "rolling consent" approach applied to a nationwide telephone survey*  
S. Faller<sup>1</sup>, J. M. Webster<sup>2</sup>, J. S. Protas<sup>1</sup>, C. Machado<sup>1</sup>, D. B. Bumaguin<sup>1</sup>, P. C. Arruda Vieira Duarte<sup>3</sup>, R. B. De Boni<sup>1</sup>, F. Pechansky<sup>1</sup>, <sup>1</sup>Center for Drug and Alcohol Research (CPAD) - Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil, <sup>2</sup>Center on Drug and Alcohol Research, University of Kentucky, Lexington, KY, <sup>3</sup>Brazilian National Secretariat for Policies on Drugs, Brasilia, Brazil
- 137 *Poly-drug use and heroin dependence in Malaysia, 1968 to 2010*  
M. Mazlan<sup>1</sup>, M. Chawarski<sup>2</sup>, R. Schottenfeld<sup>2</sup>, <sup>1</sup>Substance Abuse Research Center Muar, Muar, Malaysia, <sup>2</sup>Yale School of Medicine, Department of Psychiatry, Yale University, New Haven, CT
- 138 *Temporal changes in initiation of injection use in heroin users in Malaysia, 1968 to 2010*  
E. Tejani<sup>1</sup>, M. Chawarski<sup>1</sup>, M. Mazlan<sup>2</sup>, R. Schottenfeld<sup>1</sup>, <sup>1</sup>Yale University, New Haven, CT, <sup>2</sup>Substance Abuse Center, Muar, Malaysia
- 139 *Drug use in rural China*  
Q. Deng<sup>1</sup>, Q. Tang<sup>1,2</sup>, M. Chawarski<sup>3</sup>, R. Schottenfeld<sup>3</sup>, W. Hao<sup>1</sup>, <sup>1</sup>Psychiatry, Mental Health of Central South University, Changsha, China, <sup>2</sup>Psychiatry, The fifth People Hospital, Nanning, China, <sup>3</sup>Psychiatry, Yale University, New Haven, CT
- 140 *Correlates of poor health among retired NFL players: A national study*  
A. Ben Abdallah, S. M. Cummings, L. B. Cottler, Psychiatry, Washington University, St. Louis, MO

- 141 *Differences between NFL players who obtain their opioids from doctors only vs. illicit sources*  
S. M. Cummings, A. Ben Abdallah, L. B. Cottler, Psychiatry, Washington University School of Medicine, St. Louis, MO
- 142 *Monitoring prescription drug abuse through community pharmacies: A feasibility study*  
B. Brands<sup>3,1,2</sup>, S. Sanghera<sup>1,2</sup>, A. Elkader<sup>1</sup>, J. Rehm<sup>1,2</sup>, B. Sproule<sup>1,2</sup>, <sup>1</sup>Centre for Addiction and Mental Health, Toronto, ON, Canada, <sup>2</sup>University of Toronto, Toronto, ON, Canada, <sup>3</sup>Health Canada, Ottawa, ON, Canada
- 143 *Pathways to prescription opioid addiction*  
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- 144 *Association of risk perception and subjective norm on quantity of opioid pills misused*  
K. S. Leung, A. Ben Abdallah, K. B. Nickel, C. C. O'Leary, C. W. Striley, L. B. Cottler, Psychiatry, Washington University School of Medicine, St. Louis, MO
- 145 *Factors associated with substance abuse treatment entry among rural, Appalachian drug users in Kentucky*  
L. M. Shannon<sup>1</sup>, J. R. Havens<sup>2</sup>, <sup>1</sup>Sociology, Social Work, and Criminology, Morehead State University, Morehead, KY, <sup>2</sup>Behavioral Science, University of Kentucky, Lexington, KY

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- 146 *Work histories and employment needs of drug court clients*  
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- 147 *An economic and ethnographic investigation of Fresh Start (Detroit)*  
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- 148 *Retention to treatment in incarcerated amphetamine-dependent men with ADHD*  
M. Konstenius, N. Jayaram Lindstrom, J. Franck, Clinical Neuroscience, Karolinska Institute, Stockholm, Sweden
- 149 *Trauma exposure, PTSD, and substance abuse: A case control study of women in prison and in the general population*  
U. Warda, C. Grella, K. Lovinger, N. Messina, Integrated Substance Abuse Programs, UCLA, Los Angeles, CA
- 150 *Brief trauma and mental health assessments for female offenders in addiction treatment*  
G. A. Rowan-Szal, G. W. Joe, N. G. Bartholomew, J. Pankow, D. D. Simpson, W. K. Lehman, Institute of Behavioral Research, Texas Christian University, Fort Worth, TX
- 151 *Childhood abuse and substance misuse among criminal offenders*  
M. T. Swogger, Psychiatry, University of Rochester Medical Center, Rochester, NY
- 152 *A measure of therapeutic group process for substance-abusing teens*  
L. Stein<sup>1,2,3</sup>, R. Martin<sup>2</sup>, A. Adolfo-Signore<sup>1</sup>, D. Rohsenow<sup>2</sup>, C. Kahler<sup>2</sup>, P. Monti<sup>2</sup>, W. Hurlbut<sup>3</sup>, <sup>1</sup>CPRC, University of RI, Kingston, RI, <sup>2</sup>Psychology, Brown University, Providence, RI, <sup>3</sup>Rhode Island Training School, Cranston, RI
- 153 *Substance abuse treatment participation questionnaire for incarcerated adolescents*  
R. A. Martin<sup>1</sup>, L. Stein<sup>1,2,3</sup>, R. Lebeau<sup>2</sup>, M. Clair<sup>2,3</sup>, C. Kahler<sup>1</sup>, D. Rohsenow<sup>1</sup>, P. Monti<sup>1</sup>, W. Hurlbut<sup>3</sup>, <sup>1</sup>Center for Alcohol and Addiction Studies, Brown University, Providence, RI, <sup>2</sup>University of Rhode Island, Kingston, RI, <sup>3</sup>The Rhode Island Training School, Cranston, RI

- 154 *Sex and racial differences in victims of sexual abuse in a community corrections population*  
C. B. Clark, A. Perkins, S. Hardy, N. Katiyar, C. McCullumsmith, M. Islam, K. Cropsey,  
The University of Alabama at Birmingham, Birmingham, AL
- 155 *Pathways to treatment: Role of gender and culture*  
M. Said<sup>1</sup>, D. Owens<sup>3</sup>, C. Arfken<sup>2</sup>, <sup>1</sup>ACCESS, Dearborn, MI, <sup>2</sup>Psychiatry and Beh.  
Neurosciences, Wayne State University, Detroit, MI, <sup>3</sup>Southeast Michigan Community  
Alliance, Taylor, MI
- 156 *Predicting recidivism for released state prison offenders: Examining drug involvement and  
residential clustering effects on the likelihood of reincarceration*  
G. Stahler<sup>1</sup>, J. Mennis<sup>1</sup>, S. Belenko<sup>1</sup>, W. Welsh<sup>1</sup>, M. Hiller<sup>1</sup>, G. Zajac<sup>2</sup>, <sup>1</sup>Temple University,  
Philadelphia, PA, <sup>2</sup>Pennsylvania State University, State College, PA
- 157 *Which psycho-social changes affect drug use among probationers?*  
F. Taxman, S. Ainsworth, A. Wooditch, George Mason University, Fairfax, VA
- 158 *Longitudinal changes in the social networks of drug-using probationers*  
A. G. Rhodes<sup>1,2</sup>, F. S. Taxman<sup>1</sup>, H. Liu<sup>2</sup>, <sup>1</sup>Criminology, Law, and Society, George Mason  
University, Fairfax, VA, <sup>2</sup>Epidemiology and Community Health, Virginia Commonwealth  
University, Richmond, VA
- 159 *Ensuring quality drug treatment for criminal justice clients: Staff's attitudes toward mandated  
clients*  
J. Astone-Twerell<sup>1</sup>, K. Morgen<sup>2</sup>, D. Preston<sup>1</sup>, T. Hernitche<sup>1</sup>, <sup>1</sup>Samaritan Village, Inc,  
Briarwood, NY, <sup>2</sup>Centenary College, Hackettstown, NJ
- 160 *Peer-led integration of Motivational Interviewing into community corrections*  
P. Smith<sup>2</sup>, K. S. Ingersoll<sup>1</sup>, <sup>1</sup>Psychiatry and Neurobehavioral Sciences, University of Virginia,  
Charlottesville, CA, <sup>2</sup>Jefferson Area Community Corrections, Charlottesville, VA
- 161 *Decreasing stigmatizing attitudes about substance abuse among university undergraduate  
criminal justice students: Implications for preparing future professionals*  
N. A. Roget<sup>1</sup>, J. A. Hartje<sup>1</sup>, M. S. Berry<sup>1</sup>, W. L. Woods<sup>1</sup>, P. D. Riggs<sup>2</sup>, <sup>1</sup>University of Nevada,  
Reno, Reno, NV, <sup>2</sup>University of Colorado, Aurora, CO
- 162 *Buprenorphine treatment and gender differences for individuals under criminal justice  
supervision: A pilot study*  
K. Cropsey, P. Lane, A. Perkins, S. Hardy, B. Clark, C. McCullumsmith, University of  
Alabama at Birmingham, Birmingham, AL
- 163 *12-month outcomes of a pilot study of extended-release injectable naltrexone for opioid-  
dependent probationers and parolees*  
D. M. Coviello<sup>1</sup>, M. S. Gordon<sup>3</sup>, J. W. Cornish<sup>1,2</sup>, T. Y. Boney<sup>1</sup>, C. A. Clark<sup>1</sup>, T. W. Kinlock<sup>3,4</sup>,  
R. P. Schwartz<sup>3</sup>, M. J. Fishman<sup>5,6</sup>, C. P. O'Brien<sup>1,2</sup>, <sup>1</sup>University of Pennsylvania,  
Philadelphia, PA, <sup>2</sup>Veterans Affairs Medical Center, Philadelphia, PA, <sup>3</sup>Friends Research  
Institute, Baltimore, MD, <sup>4</sup>University of Baltimore, Baltimore, MD, <sup>5</sup>Mountain Manor  
Treatment Center, Baltimore, MD, <sup>6</sup>Johns Hopkins University, Baltimore, MD
- 164 *Factors associated with the level of knowledge about methadone treatment in the sentenced  
population of the Puerto Rican prison system*  
S. K. Rivera-Quinones, C. E. Albizu, Graduate School of Public Health, University of Puerto  
Rico, San Juan, Puerto Rico
- 165 *What does self-identified drug of choice tell us about criminal offenders?*  
M. A. Islam, C. B. Clark, A. C. Perkins, S. L. Hardy, N. Katiyar, C. McCullumsmith,  
K. L. Cropsey, Psychiatry, UAB, Birmingham, AL

- 166 *Assessment of Japanese stimulant control law offenders using the Addiction Severity Index-Japanese version: Comparison with patients in treatment settings*  
Y. Ogai<sup>1</sup>, T. Watanabe<sup>2,3</sup>, T. Koga<sup>3</sup>, E. Senoo<sup>1</sup>, K. Nakamura<sup>2</sup>, N. Mori<sup>2</sup>, K. Ikeda<sup>1</sup>, <sup>1</sup>Tokyo Institute of Psychiatry, Tokyo, Japan, <sup>2</sup>Hamamatsu University School of Medicine, Hamamatsu, Japan, <sup>3</sup>Shizuoka Prison, Shizuoka, Japan
- 167 *Correlation between antiretroviral therapy initiation during incarceration and enrollment in outpatient HIV care among newly released inmates in Odessa Region, Ukraine*  
T. K. Kiriazova, O. O. Neduzhko, HIV/AIDS Programs, NGO “Future Without AIDS”, Odessa, Ukraine
- 168 *A disease risk reduction curriculum for substance-abusing offenders*  
W. E. Lehman, G. Rowan-Szal, J. Greener, N. Bartholomew, IBR, Texas Christian University, Fort Worth, TX
- 169 *Rural drug users’ HIV risk and community corrections involvement*  
C. G. Leukefeld, A. M. Young, A. Jonas, R. Seaver, J. R. Havens, Behavioral Science, University of Kentucky, Lexington, KY

### **Grant-Writing Workshop (Pre-Registration Only)**

**Room 212-213  
10:00 AM - 2:00 PM**

### **TOWN HALL MEETING**

**Atlantic Ballroom  
12:00 - 2:00 PM**

#### **AN OPEN DISCUSSION OF ISSUES IN ACADEMIA/INDUSTRY/GOVERNMENT RELATIONS SPONSORED BY THE CPDD INDUSTRY RELATIONS COMMITTEE**

Chair: Charles W. Gorodetzky

##### *Introduction*

Charles W. Gorodetzky, Consultant, Kansas City, MO

##### *Conflict of interest*

Eric Strain<sup>1</sup>, Bob Walsh<sup>2</sup>, <sup>1</sup>Johns Hopkins University, Baltimore, MD, <sup>2</sup>National Institute on Drug Abuse, Bethesda, MD

##### *Academia/industry relations, especially in conduct of clinical trials*

Sharon Walsh<sup>1</sup>, Paul Fudala<sup>2</sup>, <sup>1</sup>University of Kentucky, Lexington, KY, <sup>2</sup>Reckitt Benckiser Pharmaceuticals, Richmond, VA

##### *Big pharma cutbacks in CNS, in general, and specifically in development of medications for treatment of substance abuse*

Phil Skolnick<sup>1</sup>, Beatriz Rocha<sup>2</sup>, <sup>1</sup>National Institute on Drug Abuse, Bethesda, MD, <sup>2</sup>Merck & Co., Inc., Rahway, NJ

*BADGES MUST BE WORN FOR ALL SESSIONS AND SOCIAL EVENTS*

## **Symposium VI**

**Regency 1  
2:00 - 4:00 PM**

### **K2/SPICE—SYNTHETIC CANNABINOIDS AS EMERGING DRUGS OF ABUSE**

Chairs: William Fantegrossi and Jennifer Wiley

- 2:00 *Synthetic cannabinoids in K2/Spice and the federal scheduling process*  
Terrence L. Boos, Drug Enforcement Administration, Springfield, VA
- 2:25 *Developing analytical testing capabilities for K2 / Spice products*  
Cindy Moran, Arkansas State Crime Laboratory, Little Rock, AR
- 2:50 *Clinical aspects of K2 / Spice in substance-abusing adolescents and young adults*  
Keith R. McCain, Arkansas Poison Control Center, Little Rock, AR
- 3:15 *In vitro and in vivo pharmacology of K2 / Spice*  
William E. Fantegrossi, Pharmacology & Toxicology, College of Medicine, University of Arkansas for Medical Sciences, Little Rock, AR
- 3:40 *K2/Spice: Transition from research tools to drugs of abuse*  
Jenny L. Wiley, Research Triangle Institute, International, Research Triangle Park, NC

## **Oral Communications 10**

**Regency 3  
2:00 - 4:00 PM**

### **DEVIATING FROM THE SCRIPT: PRESCRIPTION DRUG ABUSE**

Chairs: Theodore Cicero and Howard Chilcoat

- 2:00 *Rates of substance use in dental clinic patients*  
M. A. Ilgen<sup>1,2</sup>, P. Edwards<sup>3</sup>, A. S. Bohnert<sup>1,2</sup>, F. Blow<sup>1,2</sup>, <sup>1</sup>Psychiatry, University of Michigan, Ann Arbor, MI, <sup>2</sup>Department of Veterans Affairs Healthcare System, Ann Arbor, MI, <sup>3</sup>University of Michigan School of Dentistry, University of Michigan, Ann Arbor, MI
- 2:15 *Diversion and abuse of buprenorphine: Patient survey*  
C. Arfken<sup>1</sup>, C. Johanson<sup>1,2</sup>, C. Schuster<sup>1,2</sup>, <sup>1</sup>Psychiatry and Behavioral Neurosciences, Wayne State University, Detroit, MI, <sup>2</sup>CRS Associates, Chicago, IL
- 2:30 *Individual and network determinants of buprenorphine misuse among rural prescription opioid users*  
J. R. Havens<sup>1</sup>, M. Lofwall<sup>2,1</sup>, C. G. Leukefeld<sup>1</sup>, <sup>1</sup>Center on Drug and Alcohol Research, University of Kentucky, Lexington, KY, <sup>2</sup>Psychiatry, University of Kentucky, Lexington, KY
- 2:45 *Illicit use of buprenorphine among young adults in Ohio*  
R. Daniulaityte, R. Carlson, R. Falck, Community Health, Wright State University, Dayton, OH
- 3:00 *Changes in problem drug behavior among nonmedical OxyContin users*  
H. Chilcoat, J. M. Downing, P. Coplan, Risk Management and Epidemiology, Purdue Pharma, Stamford, CT
- 3:15 *Age-related changes in the patterns of diversion of prescription opioids in 18-75 year olds entering drug treatment programs*  
T. Cicero<sup>1</sup>, H. L. Surratt<sup>2</sup>, S. P. Kurtz<sup>2</sup>, M. S. Ellis<sup>1</sup>, J. A. Inciardi<sup>2</sup>, <sup>1</sup>Psychiatry, Washington University, St. Louis, MO, <sup>2</sup>University of Delaware, Coral Gables, FL



- 3:30 *Correlates of illicit drugs use and nonmedical use of Adderall® in the United States*  
L. Chen, S. S. Martins, P. K. Alexandre, Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD
- 3:45 *Diversion of benzodiazepine through healthcare sources*  
G. E. Ibanez, S. P. Kurtz, H. L. Surratt, University of Delaware, Coral Gables, FL

## Oral Communications 11

**Diplomat 1-2**  
**2:00 - 4:00 PM**

### HIV/AIDS: DRUGS AND THE DISEASE

Chairs: Michael L. Dennis and Adam W. Carrico

- 2:00 *Skin and needle hygiene intervention for injection drug users: Preliminary results from a randomized controlled Stage I pilot trial*  
K. Phillips<sup>1</sup>, M. D. Stein<sup>2</sup>, K. F. Corsi<sup>3</sup>, <sup>1</sup>University of Northern Colorado, Greeley, CO, <sup>2</sup>Brown University and Butler Hospital, Providence, RI, <sup>3</sup>University of Colorado Denver School of Medicine, Denver, CO
- 2:15 *Improving HIV/AIDS knowledge among cocaine-dependent outpatients*  
E. Herrmann<sup>1</sup>, S. Heil<sup>1,2</sup>, S. Higgins<sup>1,2</sup>, Y. Washio<sup>2</sup>, R. Donham<sup>2</sup>, K. Ironside<sup>2</sup>, <sup>1</sup>Psychology, University of Vermont, Burlington, VT, <sup>2</sup>Psychiatry, University of Vermont, Burlington, VT
- 2:30 *Correlates of HAART use among hospitalized HIV-infected crack cocaine users*  
R. K. Doshi<sup>1</sup>, N. Vogenthaler<sup>1</sup>, S. Lewis<sup>2</sup>, L. Gooden<sup>3</sup>, A. Rodriguez<sup>3</sup>, L. Metsch<sup>3</sup>, C. del Rio<sup>1</sup>, <sup>1</sup>Emory University School of Medicine, Atlanta, GA, <sup>2</sup>Barry University, Miami Shores, FL, <sup>3</sup>University of Miami Miller School of Medicine, Miami, FL
- 2:45 *Predictors of injection risk behavior among injection drug users enrolled in the PHARM-Link Study: A gender-stratified analysis*  
S. Blaney<sup>2</sup>, S. Amesty<sup>1</sup>, D. Ompad<sup>2</sup>, N. Crawford<sup>3</sup>, A. Rivera<sup>3</sup>, C. Fuller<sup>3</sup>, <sup>1</sup>Center for Family Medicine, Columbia University, New York, NY, <sup>2</sup>Center for Urban Epidemiologic Studies, New York Academy of Medicine, New York, NY, <sup>3</sup>Department of Epidemiology, Columbia University, New York, NY
- 3:00 *Longitudinal HIV risk in youth referred to substance treatment*  
C. Thurstone<sup>1,2</sup>, S. Salomonsen-Sautel<sup>2</sup>, S. Mikulich-Gilbertson<sup>2</sup>, M. McQueen<sup>3</sup>, T. Crowley<sup>2,3</sup>, S. Young<sup>3</sup>, R. Corley<sup>3</sup>, J. Sakai<sup>2,3</sup>, A. Hoffenberg<sup>2</sup>, C. Hartman<sup>2</sup>, M. Stallings<sup>3</sup>, J. K. Hewitt<sup>3</sup>, C. Hopfer<sup>2,3</sup>, <sup>1</sup>Denver Health and Hospital Authority, Denver, CO, <sup>2</sup>Psychiatry, University of Colorado, Aurora, CO, <sup>3</sup>University of Colorado, Boulder, CO
- 3:15 *Psychological factors are associated with stimulant use in a probability-based sample of urban MSM*  
A. W. Carrico<sup>1</sup>, T. M. Rice<sup>2</sup>, L. M. Pollack<sup>1</sup>, J. T. Moskowitz<sup>1</sup>, W. J. Woods<sup>1</sup>, J. A. Catania<sup>3</sup>, <sup>1</sup>University of California, San Francisco, San Francisco, CA, <sup>2</sup>University of California, Berkeley, Berkeley, CA, <sup>3</sup>Oregon State University, Corvallis, OR
- 3:30 *Missed opportunities for hepatitis C virus screening in community-based drug treatment centers*  
S. Cohen<sup>1</sup>, G. Colfax<sup>1</sup>, D. J. Feaster<sup>2</sup>, R. Duan<sup>2</sup>, L. R. Metsch<sup>2</sup>, B. R. Schackman<sup>3</sup>, P. T. Korthuis<sup>4</sup>, J. L. Sorensen<sup>1</sup>, K. Wiest<sup>4,6</sup>, E. Antunez<sup>1</sup>, R. Mandler<sup>5</sup>, M. Das<sup>1</sup>, <sup>1</sup>San Francisco Department of Public Health, San Francisco, CA, <sup>2</sup>University of Miami Miller School of Medicine, Miami, FL, <sup>3</sup>Weill Cornell Medical College, NY, NY, <sup>4</sup>Oregon Health and Science University, Portland, OR, <sup>5</sup>National Institute of Drug Abuse, National Institute of Health, Bethesda, MD, <sup>6</sup>CODA, Inc., Portland, OR

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**Tuesday, June 21, 2011**

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- 3:45 *Impact of Recovery Management Checkups on HIV-positive substance users over 4 years*  
M. L. Dennis<sup>1</sup>, C. K. Scott<sup>2</sup>, R. R. Funk<sup>1</sup>, <sup>1</sup>GAIN Coordinating Center and Lighthouse Institute, Chestnut Health Systems, Normal, IL, <sup>2</sup>Lighthouse Institute, Chestnut Health Systems, Chicago, IL

## **Symposium VII**

**Diplomat 4-5  
2:00 - 4:00 PM**

### **ABUSE LIABILITY AND PRODUCT APPEAL ASSESSMENT OF TOBACCO**

Chairs: Dorothy Hatsukami and Jack Henningfield

- 2:00 *Abuse liability assessment of tobacco products*  
Lawrence Carter, Psychiatric Research Institute - Center for Addiction Research, University of Arkansas for Medical Sciences, Little Rock, AR
- 2:30 *Marketing, tobacco product appeal and consumer response assessment*  
Vaughan Rees, Center for Global Tobacco Control, Harvard School of Public Health, Boston, MA
- 3:00 *Post-marketing surveillance of tobacco products*  
Jack Henningfield, Pinney Associates, Bethesda, MD
- 3:30 *Discussant*  
Edward M. Sellers, DL Global Partners, Toronto, ON, Canada

### **CPDD BUSINESS MEETING (Members Only)**

**Regency 1  
4:15 - 5:15 PM**

### **CPDD/INRC – DINNER AND DANCING**

**Grand Ballroom  
7:00 - 10:00 PM**

*BADGES MUST BE WORN FOR ALL SESSIONS AND SOCIAL EVENTS*

**CPDD Travel Awards Breakfast**  
(By Invitation Only)

**Room 212**  
**7:00 - 8:30 AM**

**INRC Welcome**

**Great Hall 1-2**  
**8:00 - 8:30 AM**

John Traynor, University of Michigan, USA, INRC President  
Sari Izenwasser, University of Miami Miller School of Medicine, and  
Ellen Unterwald, Temple University School of Medicine, INRC Program Co-Chairs  
Jean Bidlack, University of Rochester, INRC Treasurer

**INRC and CPDD Joint Plenary**

**Great Hall 1-2**  
**8:30 - 9:45 AM**

Report from the National Institute on Drug Abuse  
*Nora D. Volkow, NIDA, Bethesda, MD*

**INRC/CPDD Symposium 1**

**Regency 1**  
**10:00 AM - 12:00 NOON**

**EPIGENETICS OF DRUG ABUSE GENES**

Chairs: Li-Na Wei and Hiroshi Ueda

- 10:00 *DNA methylation: A dynamic and stable regulator of memory*  
Courtney Miller, The Scripps Research Institute, USA
- 10:30 *The role of chromatin modifying enzymes in the acquisition and extinction of context-drug associated memory*  
Marcelo Wood, University of California, USA
- 11:00 *Epigenetics of opioid receptor genes – nutrients, drugs and behavior*  
Li-Na Wei, University of Minnesota Medical School, USA
- 11:30 *Chromatin plasticity in addicted brain: Prodynorphin upregulation in human alcoholics*  
Georgy Bakalkin, Uppsala University, Sweden

**Oral Communications 12**

**Regency 3**  
**10:00 AM - 12:00 NOON**

**PULLING OUT ALL THE STOPS: IMPULSIVITY**

Chairs: J. David Jentsch and Porche Henry

- 10:00 *Strength of association between two rodent models of impulsivity and cocaine self-administration*  
J. B. Richards, A. M. Gancarz, M. A. Kausch, L. J. Beyley, D. R. Lloyd, M. Robble, Research Institute on Addictions, State University of New York at Buffalo, Buffalo, NY
- 10:15 *Caffeine-primed reinstatement of cocaine-seeking behavior in rats selected for high and low impulsivity*  
P. Regier<sup>1</sup>, M. Carroll<sup>2</sup>, <sup>1</sup>Graduate Program of Neuroscience, University of Minnesota, Minneapolis, MN, <sup>2</sup>Department of Psychiatry, University of Minnesota, Minneapolis, MN

- 10:30 *Genetic dissection of inhibitory control abilities in mice*  
J. Jentsch, R. E. Laughlin, Psychology and Psychiatry & Bio-behavioral Sciences, UCLA, Los Angeles, CA
- 10:45 *Young adults with stimulant abuse: Impulsivity and brain dysfunction*  
S. Specker<sup>1</sup>, V. Slaymaker<sup>2</sup>, A. Person<sup>1</sup>, K. Lim<sup>1</sup>, <sup>1</sup>University of Minnesota, Minneapolis, MN, <sup>2</sup>Hazelden, Center City, MN
- 11:00 *Sex differences in the effects of oral d-amphetamine on impulsivity, mood and performance in normal healthy controls*  
S. C. Reed, F. R. Levin, S. M. Evans, Psychiatry, Columbia University College of Physicians & Surgeons, New York, NY
- 11:15 *Reliability of the Sexual Discounting Task: HIV risk behavior and the discounting of delayed sexual rewards in cocaine dependence*  
N. R. Bruner, M. W. Johnson, Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD
- 11:30 *Trauma exposure, distress, and measures of impulsivity in cocaine dependence*  
P. Henry, M. Z. Mintzer, E. C. Strain, G. E. Bigelow, A. Umbricht, Psychiatry, Johns Hopkins University School of Medicine, Baltimore, MD
- 11:45 *Impulsivity, affective state, and cognitive performance in heroin-dependent individuals in Guangdong, China*  
H. Zeng<sup>1</sup>, T. Lee<sup>2</sup>, M. C. Chawarski<sup>3</sup>, R. Schottenfeld<sup>3</sup>, X. Y. Wu<sup>1</sup>, <sup>1</sup>School of Medicine, Jinan University, Guangzhou, China, <sup>2</sup>Department of Psychology, The University of Hong Kong, Hong Kong, Hong Kong, <sup>3</sup>School of Medicine, Yale University, New Haven, CT

## Symposium VIII

**Diplomat 1-2**  
**10:00 AM - 12:00 NOON**

### **THE ROLE OF PARENTAL MENTAL DISORDERS AND PARENTAL REARING BEHAVIOR FOR CANNABIS USE AND CANNABIS USE DISORDERS IN OFFSPRING**

Chairs: Silke Behrendt and Ty A. Ridenour

- 10:00 *Lifetime and regular cannabis use during adolescence: Is parental influence moderated by personality?*  
Hanneke E. Creemers, Erasmus Medical Center/Sophia Children's Hospital, Rotterdam, Netherlands
- 10:30 *Associations between cannabis use disorders and major depression in parents and their adopted and biological adolescent offspring*  
Naomi R. Marmorstein, Rutgers University, Camden, NJ
- 11:00 *To what extent does parental psychopathology predict cannabis use age of onset, rate of progression and disorder?*  
Ty A. Ridenour, Center for Education & Drug Abuse Research, University of Pittsburgh, Pittsburgh, PA
- 11:30 *The role of parental substance use, anxiety, and affective disorders and rearing style for the risk of cannabis use and cannabis use disorders in offspring*  
Silke Behrendt, Institute of Clinical Psychology and Psychotherapy, Technical University of Dresden, Dresden, Germany

## Oral Communications 13

Diplomat 4-5

10:00 AM - 12:00 NOON

### LIGHTING UP—IMAGING BRAINS

Chairs: Thomas J. Crowley and Francis J. McClernon

- 10:00 *A brain imaging study into nicotine-induced dopamine release in cigarette smokers in treatment with bupropion using [11 C] Raclopride in positron emission tomography*  
A. M. Weinstein<sup>1,2</sup>, J. Greif<sup>2</sup>, N. Freedman<sup>1</sup>, E. Mishani<sup>1</sup>, A. Weizman<sup>3</sup>, R. Ebstein<sup>4</sup>, R. Chisin<sup>1</sup>, M. Bocher<sup>1</sup>, <sup>1</sup>Nuclear Medicine, Hadassah Medical Organization, Jerusalem, Israel, <sup>2</sup>Lung Institute, Sourasky Medical Center, Tel Aviv, Israel, <sup>3</sup>Psychiatry, Geha Hospital, Petach Tikvah, Israel, <sup>4</sup>Scheinfeld Center for Genetic Studies in the Social Sciences, Hebrew University, Jerusalem, Israel
- 10:15 *Sex differences in tobacco smoking-induced upregulation of Beta2-nAChRs*  
I. Esterlis<sup>1</sup>, S. McKee<sup>1</sup>, F. Bois<sup>1</sup>, J. Seibyl<sup>2,1</sup>, C. Mazure<sup>1</sup>, S. Krishnan-Sarin<sup>1</sup>, J. Staley<sup>1</sup>, M. Picciotto<sup>1</sup>, S. O'Malley<sup>1</sup>, K. Cosgrove<sup>1</sup>, <sup>1</sup>Psychiatry, Yale University and VACHS, West Haven, CT, <sup>2</sup>Inst for Neurodegen D/O, New Haven, CT
- 10:30 *Smoking stereotypy is associated with decreased caudate activation during behavioral control*  
F. J. McClernon, R. Kozink, M. Hallyburton, K. McCormick, M. Addicott, B. Froeliger, Psychiatry, Duke Medical Center, Durham, NC
- 10:45 *Functional connectivity of insula cortex in human adolescent smokers and non-smokers*  
D. G. Ghahremani<sup>1</sup>, A. Galvan<sup>2,3</sup>, C. M. Baker<sup>1</sup>, K. M. McGlennen<sup>2</sup>, R. A. Poldrack<sup>4</sup>, E. D. London<sup>1,3,5</sup>, <sup>1</sup>Department of Psychiatry & Biobehavioral Sciences, UCLA, Los Angeles, CA, <sup>2</sup>Department of Psychology, UCLA, Los Angeles, CA, <sup>3</sup>Brain Research Institute, UCLA, Los Angeles, CA, <sup>4</sup>Imaging Research Center, University of Texas, Austin, TX, <sup>5</sup>Molecular and Medical Pharmacology, UCLA, Los Angeles, CA
- 11:00 *Craving and severity of cannabis dependence modulate brain responses to cannabis cues*  
J. Cousijn<sup>1,2</sup>, A. E. Goudriaan<sup>1</sup>, K. R. Ridderinkhof<sup>2</sup>, D. J. Veltman<sup>1</sup>, W. van den Brink<sup>1</sup>, R. W. Wiers<sup>2</sup>, <sup>1</sup>Psychiatry, Academic Medical Center, Amsterdam, Netherlands, <sup>2</sup>Psychology, University of Amsterdam, Amsterdam, Netherlands
- 11:15 *Resting state connectivity between the amygdala and posterior cingulate cortex predicts abstinence from cannabis*  
R. Szucs-Reed<sup>1,2</sup>, M. Goldman<sup>2</sup>, Z. Wang<sup>2</sup>, Y. Li<sup>2</sup>, R. Ehrman<sup>1,2</sup>, T. Franklin<sup>2</sup>, J. Suh<sup>1,2</sup>, K. Kampman<sup>2</sup>, R. Carson<sup>2</sup>, J. Shin<sup>2</sup>, C. O'Brien<sup>2,1</sup>, A. Childress<sup>2,1</sup>, <sup>1</sup>Philadelphia VA Med Center, Philadelphia, PA, <sup>2</sup>Univ of Pennsylvania, Philadelphia, PA
- 11:30 *Using fMRI to evaluate adolescents' response to a psychosocial cannabis treatment*  
S. W. Feldstein Ewing, F. M. Filbey, S. Blaine, J. Fries, S. DeWitt, A. McEachern, H. Mead, K. Ingersoll, K. Hutchison, Translational Neuroscience, the Mind Research Network, Albuquerque, NM
- 11:45 *Risky and cautious decision processing: Boys with antisocial substance disorder*  
T. J. Crowley<sup>1</sup>, M. S. Dalwani<sup>1</sup>, S. K. Mikulich-Gilbertson<sup>1</sup>, Y. P. Du<sup>1</sup>, K. M. Raymond<sup>1</sup>, M. T. Banich<sup>1,2</sup>, <sup>1</sup>Univ. of Colo. Denver, Aurora, CO, <sup>2</sup>Univ. of Colo. Boulder, Boulder, CO

## CPDD/INRC Poster Session III (Lunch)

Great Hall 3-6  
12:00 - 2:00 PM

Odd-numbered posters manned first hour;

Even-numbered, second hour

Set-up time begins Tuesday 1:00 P.M.

Must be removed by Wednesday 2:00 P.M.

### POLICY

- 1 *Neighborhood correlates of illicit cigarette sales in NYC*  
D. C. Ompad<sup>1,2</sup>, S. Blaney<sup>1</sup>, M. Kusick<sup>1</sup>, M. Cerdá<sup>1,2</sup>, D. Vlahov<sup>1,2</sup>, <sup>1</sup>Center for Urban Epidemiologic Studies, New York Academy of Medicine, New York, NY, <sup>2</sup>Department of Epidemiology, Columbia University Mailman School of Public Health, New York, NY
- 2 *Dissolvable tobacco: Poison candy or methadone for smokers?*  
R. K. Lanier, C. Wright, Rock Creek Pharmaceuticals, Inc., Gloucester, MA
- 3 *State policy and availability of medications in substance abuse treatment programs*  
H. K. Knudsen<sup>1</sup>, A. J. Abraham<sup>2</sup>, <sup>1</sup>Behavioral Science, University of Kentucky, Lexington, KY, <sup>2</sup>Institute for Behavioral Research, University of Georgia, Athens, GA
- 4 *An economic evaluation of a paperwork burden reduction initiative*  
J. Croft<sup>1</sup>, M. Love<sup>1</sup>, D. Carise<sup>2</sup>, D. Festinger<sup>1</sup>, K. Dugosh<sup>1</sup>, <sup>1</sup>Treatment Research Institute, Philadelphia, PA, <sup>2</sup>Phoenix House, New York, NY
- 5 *The Reinforcing Therapist Performance (RTP) experiment: Preliminary cost-effectiveness findings*  
D. S. Shepard<sup>2</sup>, A. Lwin<sup>2</sup>, G. Strickler<sup>2</sup>, C. Atuaka<sup>2</sup>, B. Garner<sup>1</sup>, <sup>1</sup>Chestnut Health Systems, Normal, IL, <sup>2</sup>Brandeis University, Waltham, MA
- 6 *The relationship between drug use and the business cycle: Potential implications of the global financial crisis*  
A. Ritter, J. Chalmers, Drug Policy Modelling Program, NDARC, UNSW, Sydney, NSW, Australia
- 7 *Combining remedial and motivational strategies to improve consent recall among research participants*  
D. S. Festinger<sup>1</sup>, K. L. Dugosh<sup>1</sup>, D. B. Marlowe<sup>1,2</sup>, N. Clements<sup>1</sup>, <sup>1</sup>Law and Ethics, Treatment Research Institute, Philadelphia, PA, <sup>2</sup>National Association of Drug Court Professionals, Alexandria, VA
- 8 *Photovoice as a way to engage and retain older African-American methadone clients*  
D. Rosen<sup>1</sup>, J. R. Cornelius<sup>2</sup>, S. Goodkind<sup>1</sup>, L. M. Smith<sup>2</sup>, <sup>1</sup>Social Work, University of Pittsburgh, Pittsburgh, PA, <sup>2</sup>Psychiatry, University of Pittsburgh, Pittsburgh, PA
- 9 *Patient access to buprenorphine treatment in Appalachia: A geographic assessment using SAMHSA's physician-locator website*  
E. W. Gunderson<sup>1,2</sup>, E. C. Kim<sup>1</sup>, <sup>1</sup>University of Virginia, Charlottesville, VA, <sup>2</sup>Columbia University, New York, NY
- 10 *Sources of diverted prescription opioids among a diverse sample of abusers in South Florida*  
S. P. Kurtz<sup>1</sup>, H. L. Surratt<sup>1</sup>, T. J. Cicero<sup>2</sup>, G. E. Ibanez<sup>1</sup>, M. A. Levi-Minzi<sup>1</sup>, <sup>1</sup>Center for Drug and Alcohol Studies, University of Delaware, Coral Gables, FL, <sup>2</sup>Department of Psychiatry, Washington University School of Medicine, St. Louis, MO

11 *Rank-ordering prescribers by opioid abuse and diversion risk*

P. DuBose<sup>2</sup>, J. D. Haddox<sup>1</sup>, A. Bender<sup>3</sup>, J. Markman<sup>4</sup>, <sup>1</sup>Health Policy, Purdue Pharma L.P., Stamford, CT, <sup>2</sup>Principled Strategies, Encinitas, CA, <sup>3</sup>Polaris Management Partners, New York, NY, <sup>4</sup>Wolters Kluwer, Philadelphia, PA

### POLYDRUGS II

12 *WITHDRAWN*

13 *Turning points in drug use trajectories: Proposition 36 participants' perspectives*

C. Teruya, M. Olaer, Y. Hser, UCLA Integrated Substance Abuse Programs, Los Angeles, CA

14 *Supporting recovery in the community: Preliminary outcomes of clients participating in the Phoenix House Bronx Community Recovery Center*

A. A. Mericle<sup>1</sup>, J. Feliciano<sup>2</sup>, D. Carise<sup>2,3</sup>, <sup>1</sup>Treatment Research Institute, Philadelphia, PA, <sup>2</sup>Phoenix House, New York, NY, <sup>3</sup>University of Pennsylvania, Philadelphia, PA

15 *The relationship between therapist and patient gender/race matching and substance use outcomes across two MET trials*

A. A. Forcehimes<sup>1</sup>, M. Nakazawa<sup>1</sup>, L. Montgomery<sup>2</sup>, K. A. Burlew<sup>2</sup>, A. Kosinski<sup>3</sup>, P. Kothari<sup>4</sup>, <sup>1</sup>CASAA, University of New Mexico, Albuquerque, NM, <sup>2</sup>U. Cincinnati, Cincinnati, OH, <sup>3</sup>Duke, Durham, NC, <sup>4</sup>Synergy, Silver Spring, MD

16 *Perceived barriers to substance abuse treatment among Asians and Pacific Islanders*

M. Y. Iguchi<sup>1</sup>, C. L. Masson<sup>3</sup>, M. Shopshire<sup>1</sup>, K. Hoffman<sup>2</sup>, S. Sen<sup>1</sup>, N. Hengl<sup>1</sup>, J. L. Sorensen<sup>1</sup>, D. McCarty<sup>2</sup>, <sup>1</sup>University of California, San Francisco, San Francisco, CA, <sup>2</sup>Oregon Health Sciences University, Portland, OR, <sup>3</sup>University of California, Los Angeles, Los Angeles, CA

17 *Predictors of therapist turnover and competence in an evidence-based practice: Findings from a large-scale dissemination and implementation initiative*

B. Garner, B. D. Hunter, S. H. Godley, M. D. Godley, Chestnut Health Systems, Normal, IL

18 *Using Appreciative Inquiry to identify addiction treatment field best practices and prioritize future goals for collaborations with key community stakeholders*

P. K. Horvath, Department of Psychiatry, Virginia Commonwealth University, Richmond, VA

19 *Evidence-based multimedia toolkits improve counselor adherence in group counseling with minimal training: Preliminary results*

A. C. Brooks<sup>1</sup>, G. T. DiGuseppi<sup>1</sup>, A. Laudet<sup>2</sup>, D. Knoblach<sup>1</sup>, D. Carise<sup>3</sup>, K. C. Kirby<sup>1,4</sup>, <sup>1</sup>Treatment Research Institute, Philadelphia, PA, <sup>2</sup>National Development and Research Institutes, New York, NY, <sup>3</sup>Phoenix House, New York, NY, <sup>4</sup>University of Pennsylvania School of Medicine, Philadelphia, PA

20 *Counselor characteristics influence MI skill acquisition following workshop and post-workshop training*

K. M. Carpenter<sup>1</sup>, W. Cheng<sup>1</sup>, J. L. Smith<sup>1</sup>, A. Brooks<sup>3</sup>, P. Amrhein<sup>2,1</sup>, E. V. Nunes<sup>1</sup>, <sup>1</sup>Columbia University, New York, NY, <sup>2</sup>Montclair State University, Montclair, NJ, <sup>3</sup>Treatment Research Institute, Philadelphia, PA

21 *Training substance abuse clinicians in MI using teleconferencing supervision*

J. L. Smith<sup>1</sup>, K. M. Carpenter<sup>1</sup>, P. Amrhein<sup>2</sup>, A. C. Brooks<sup>3</sup>, E. V. Nunes<sup>1</sup>, <sup>1</sup>Division of Substance Abuse, New York State Psychiatric Institute, New York, NY, <sup>2</sup>Montclair State University, Montclair, NJ, <sup>3</sup>Treatment Research Institute, Philadelphia, PA

22 *Maintaining MI skill proficiency: An enhanced training package for clinical supervisors practicing in frontier states*

W. L. Woods<sup>1</sup>, N. A. Roget<sup>1</sup>, J. A. Hartje<sup>1</sup>, K. Speck<sup>2</sup>, A. H. Skinstad<sup>3</sup>, <sup>1</sup>University of Nevada, Reno, Reno, NV, <sup>2</sup>University of Nebraska, Lincoln, Lincoln, NE, <sup>3</sup>University of Iowa, Iowa City, IA

- 23 *Growing motivational interviewing capacity and sustainability from a partnership starter project*  
K. P. Shuster<sup>1</sup>, G. G. Soto<sup>1</sup>, P. K. Horvatic<sup>2</sup>, <sup>1</sup>Prince William County Community Services Board, Richmond, VA, <sup>2</sup>Virginia Commonwealth University, Richmond, VA
- 24 *The Health-Related Quality of Life for Drug Abusers Test: A validation study of the English version in Australia*  
R. Sud<sup>1</sup>, J. Emerson<sup>1</sup>, E. M. Shafaei<sup>1</sup>, O. M. Lozano<sup>3</sup>, C. Zubaran<sup>1,2</sup>, <sup>1</sup>University of Western Sydney, Sydney, NSW, Australia, <sup>2</sup>Department of Psychiatry, Sydney West Area Health Service, Sydney, NSW, Australia, <sup>3</sup>University of Huelva, Huelva, Spain
- 25 *Addiction treatment matching in the 21st century: A new solution to an old problem*  
A. Jaffe, <sup>1</sup>California Treatment Services, Los Angeles, CA, <sup>2</sup>Integrated Substance Abuse Program, UCLA, Los Angeles, CA
- 26 *Findings from a three-year follow-up study of the first substance abuse prevention and treatment project at an institute of higher education in Israel*  
E. Lawental, M. Schori, Social Work, Tel-Hai Academic College, Nesher, Israel
- 27 *Substances, academics, and college student goals*  
D. Morisano<sup>1,3</sup>, E. Rosenberg<sup>1</sup>, J. B. Hirsh<sup>2</sup>, J. B. Peterson<sup>2</sup>, R. O. Pihl<sup>3</sup>, <sup>1</sup>Psychiatry/Child & Family Institute, Columbia University College of Physicians & Surgeons/St. Luke's-Roosevelt Hospital, New York, NY, <sup>2</sup>Psychology, University of Toronto, Toronto, ON, Canada, <sup>3</sup>Psychology, McGill University, Montreal, QC, Canada
- 28 *Effectiveness of overdose prevention training: Differences between trained and untrained IDUs*  
S. Lankenau<sup>1</sup>, K. Wagner<sup>3</sup>, E. Iverson<sup>2</sup>, M. McNeely<sup>2</sup>, J. Jackson Bloom<sup>2</sup>, K. Silva<sup>1</sup>, A. Kecojovic<sup>1</sup>, <sup>1</sup>Community Health and Prevention, Drexel University, Philadelphia, PA, <sup>2</sup>Children's Hospital Los Angeles, Los Angeles, CA, <sup>3</sup>University of California, San Diego, San Diego, CA
- 29 *Health care utilization and experiences in persons with SUDs: Preliminary findings from the Health Anonymous Research Evaluation*  
L. Safford<sup>1</sup>, J. May<sup>2</sup>, D. Farrell-Moore<sup>2</sup>, A. Aggarwal<sup>1</sup>, A. Dibble<sup>1</sup>, S. Ondersma<sup>3</sup>, P. Nora<sup>1</sup>, D. Svikis<sup>1</sup>, <sup>1</sup>Institute for Drug and Alcohol Studies, Virginia Commonwealth University, Richmond, VA, <sup>2</sup>Richmond Behavioral Health Authority, Richmond, VA, <sup>3</sup>Psychiatry, Wayne State University, Detroit, MI
- 30 *Implementing drug screening in primary care: Not finding what we are looking for?*  
R. Saitz<sup>1,2</sup>, D. Alford<sup>1,2</sup>, J. Witas<sup>1,2</sup>, D. Allensworth-Davies<sup>2</sup>, T. Palfai<sup>2</sup>, D. M. Cheng<sup>2</sup>, J. Bernstein<sup>2</sup>, J. H. Samet<sup>1,2</sup>, <sup>1</sup>Boston Medical Center, Boston, MA, <sup>2</sup>Boston University, Boston, MA
- 31 *Are dentists ready to offer screening, brief intervention and referral to treatment for substance use?*  
J. McNeely<sup>1</sup>, S. Wright<sup>1</sup>, J. Rotrosen<sup>1,3</sup>, D. Shelley<sup>1,2</sup>, A. G. Matthews<sup>4</sup>, M. Buchholz<sup>2</sup>, F. Curro<sup>2</sup>, <sup>1</sup>NYU School of Medicine, New York, NY, <sup>2</sup>NYU College of Dentistry, New York, NY, <sup>3</sup>VA NY Harbor Healthcare System, New York, NY, <sup>4</sup>EMMES Corporation, Rockville, MD
- 32 *Project Engage: SBIRT with medically hospitalized patients*  
T. Horton<sup>2</sup>, G. E. Woody<sup>1</sup>, A. Pecoraro<sup>1</sup>, P. A. Wright<sup>3</sup>, B. Silverman<sup>4,5</sup>, <sup>1</sup>Psychiatry, University of Pennsylvania, Philadelphia, PA, <sup>2</sup>Department of Medicine, Christiana Care Health System and Wilmington Hospital, Wilmington, DE, <sup>3</sup>Delaware Physicians Care, Inc. (DPCI), Wilmington, DE, <sup>4</sup>Brandywine Counseling and Community Services, Wilmington, DE, <sup>5</sup>Bryn Mawr Graduate School of Social Work, Bryn Mawr, PA



- 33 *Baseline differences in residents' attitudes and behaviors in delivering SBIRT services to at-risk drug and alcohol users*  
A. Johnson, J. P. Seale, Family Medicine, Mercer University School of Medicine, Macon, GA
- 34 *Enriching attitudes of psychiatry residents toward people with substance use disorders*  
M. Cutler<sup>1</sup>, J. Peirce<sup>1</sup>, M. Chisolm<sup>1</sup>, M. Moon<sup>2</sup>, K. Neufeld<sup>1</sup>, <sup>1</sup>Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD, <sup>2</sup>Berman Institute of Bioethics, Johns Hopkins University, Baltimore, MD
- 35 *Defining client outcomes: A study of minority-focused substance abuse treatment staff*  
A. Jernstrom, S. E. Larios, J. S. Sorensen, University of California San Francisco, San Francisco, CA
- 36 *Psychometric properties of clinical monitoring items*  
T. G. Kolwicz<sup>1</sup>, A. Camilleri<sup>1</sup>, J. Cacciola<sup>1,2</sup>, K. Dugosh<sup>1</sup>, A. Alterman<sup>1,2</sup>, <sup>1</sup>Treatment Research Institute, Philadelphia, PA, <sup>2</sup>University of Pennsylvania, Philadelphia, PA
- 37 *A comparative study of sugar, marijuana, cocaine and alcohol dependence: A construct analysis using item response theory*  
M. C. Rosa<sup>1,2</sup>, N. S. Rocha<sup>2</sup>, A. C. Araujo<sup>1</sup>, C. M. Gomes<sup>1</sup>, S. B. Slavutzky<sup>2</sup>, F. H. Kessler<sup>2</sup>, E. F. Ferreira<sup>1</sup>, F. Pechansky<sup>2</sup>, <sup>1</sup>Federal University of Minas Gerais, Belo Horizonte, Brazil, <sup>2</sup>Federal University of Rio Grande do Sul, Porto Alegre, Brazil
- 38 *Secondary data analysis using item response theory to improve measurement of recovery*  
L. Cai<sup>1</sup>, Y. Hser<sup>2</sup>, <sup>1</sup>GSEIS & Psychology, UCLA, Los Angeles, CA, <sup>2</sup>Psych & Biobehav Sci-ISAP, UCLA, Los Angeles, CA
- 39 *Properties of DSM disordered gambling criteria in French gamblers*  
C. Denis<sup>2,1</sup>, M. Fatseas<sup>1,2</sup>, V. Beltran<sup>1,3</sup>, J. Daulouede<sup>3,2,1</sup>, M. Auriacombe<sup>1,2,3</sup>, <sup>1</sup>Addiction Psychiatry (UMSR-CNRS), Universite Victor Segalen Bordeaux 2, Bordeaux, France, <sup>2</sup>Addiction Treatment Center, CHCP, CHU, Bordeaux, France, <sup>3</sup>Bizia Addiction Treatment Center, Bayonne, France
- 40 *Unemployment, client employment status, and substance abuse treatment outcomes in Nevada*  
L. Greenfield<sup>1</sup>, G. E. Bigelow<sup>2</sup>, W. C. Bailey<sup>3</sup>, <sup>1</sup>Consultant, State of Nevada, Kensington, MD, <sup>2</sup>BPRU, Johns Hopkins Medical Institutions, Baltimore, MD, <sup>3</sup>SAPTA, State of Nevada, Carson City, NV

### PAIN

- 41 *Enhancement of morphine's effects on pain-suppressed wheel-running by a FAAH inhibitor*  
L. L. Miller, L. A. Dykstra, Psychology, University of North Carolina, Chapel Hill, NC
- 42 *Morphine vaccination and its inhibition of morphine-induced CPP and analgesia in rats*  
X. Shen<sup>1</sup>, T. A. Kosten<sup>2</sup>, A. Y. Lopez<sup>1</sup>, P. W. O'Malley<sup>1</sup>, Y. Wu<sup>1</sup>, B. M. Kinsey<sup>1</sup>, F. M. Orson<sup>1</sup>, <sup>1</sup>Departments of Medicine, Immunology, Baylor College of Medicine, Houston, TX, <sup>2</sup>Departments of Psychiatry, Baylor College of Medicine, Houston, TX
- 43 *Estrogen attenuates nociceptive responses to carrageenan-induced inflammation in a time-dependent manner*  
T. Mathew<sup>1,2</sup>, K. Y. Shivers<sup>1,2</sup>, L. C. Abrams<sup>1,2</sup>, T. Schnieder<sup>1,2</sup>, N. J. Amador<sup>1,2</sup>, D. Hunter<sup>3</sup>, S. Jenab<sup>1</sup>, V. Quinones-Jenab<sup>1</sup>, <sup>1</sup>Biopsychology and Behavioral Neuroscience, Hunter College, New York, NY, <sup>2</sup>CUNY Graduate School and University Center, New York, NY, <sup>3</sup>NYSPI at Columbia Medical Center, New York, NY
- 44 *Pain in methadone maintenance patients*  
R. M. Seewald<sup>1</sup>, M. Todman<sup>2</sup>, E. Loran<sup>2</sup>, D. Sivesind<sup>2</sup>, D. Roane<sup>1</sup>, D. Haller<sup>3</sup>, R. Cruciani<sup>1</sup>, <sup>1</sup>Beth Israel Medical Center, NY, NY, <sup>2</sup>New School for Social Research, NY, NY, <sup>3</sup>St Luke's-Roosevelt Hospital, NY, NY

- 45 *Boredom, pain and illicit drug use in MMT patients*  
E. G. Loran<sup>1</sup>, M. Todman<sup>1</sup>, D. Sivesind<sup>1</sup>, R. Cruciani<sup>2</sup>, D. Roane<sup>2</sup>, D. Haller<sup>3</sup>, E. Lehr<sup>1</sup>,  
R. M. Seewald<sup>2</sup>, <sup>1</sup>The New School for Social Research, NY, NY, <sup>2</sup>Beth Israel Medical Center,  
NY, NY, <sup>3</sup>St Luke's Roosevelt, NY, NY
- 46 *Psychological flexibility predicts opioid misuse risk in low back pain patients receiving opioid therapy*  
J. S. Potter<sup>1</sup>, M. Eckmann<sup>1</sup>, S. Ramamurthy<sup>1</sup>, A. Stotts<sup>2</sup>, A. Gutierrez<sup>1</sup>, K. Rosen<sup>1</sup>, <sup>1</sup>Psychiatry,  
UT Health Science Center, San Antonio, TX, <sup>2</sup>Family Medicine, UT Houston, Houston, TX
- 47 *Adherence to clinical guidelines for opioid therapy for chronic pain in patients with substance use disorder*  
B. J. Morasco, J. Duckart, S. K. Dobscha, Mental Health and Clinical Neurosciences Division,  
Portland VA Medical Center, Portland, OR
- 48 *Sex differences in patients with chronic pain and prescription opioid abuse during buprenorphine/naloxone maintenance*  
J. Manubay<sup>1,2</sup>, S. K. Vosburg<sup>1,2</sup>, S. D. Comer<sup>1,2</sup>, J. Jones<sup>1,2</sup>, Z. Cooper<sup>1,2</sup>, J. Fogel<sup>1,2</sup>,  
M. A. Sullivan<sup>1,2</sup>, <sup>1</sup>Psychiatry, Columbia University, New York, NY, <sup>2</sup>Substance Abuse, NYSPI,  
New York, NY
- 49 *Prevalence of chronic pain and interest in pain management among patients seeking office-based buprenorphine-naloxone treatment*  
D. Barry<sup>1,2</sup>, J. Savant<sup>2</sup>, M. Beitel<sup>1,2</sup>, C. Cutter<sup>1,2</sup>, B. Moore<sup>1</sup>, R. Schottenfeld<sup>1</sup>, D. Fiellin<sup>1</sup>, <sup>1</sup>Yale  
University School of Medicine, New Haven, CT, <sup>2</sup>APT Foundation Pain Treatment Services,  
New Haven, CT
- 50 *Chronic pain and office-based buprenorphine-naloxone treatment outcomes*  
C. J. Cutter<sup>1,2</sup>, D. Barry<sup>1,2</sup>, J. Savant<sup>2</sup>, M. Beitel<sup>1,2</sup>, B. Moore<sup>1</sup>, L. Sullivan<sup>1</sup>, R. Schottenfeld<sup>1</sup>,  
D. Fiellin<sup>1</sup>, <sup>1</sup>Yale University School of Medicine, New Haven, CT, <sup>2</sup>APT Foundation Pain  
Treatment Services, New Haven, CT
- 51 *Pain acceptance and substance use severity in addictions treatment patients with pain*  
F. Kleinberg<sup>2,1</sup>, M. Ilgen<sup>2,1</sup>, A. Bohnert<sup>2,1</sup>, <sup>1</sup>University of Michigan, Ann Arbor, MI,  
<sup>2</sup>Department of Veterans Affairs Healthcare System, Ann Arbor, MI
- 52 *Associations among pain, substance use and depression in HIV-positive men*  
J. A. Stein<sup>1</sup>, J. C. Tsao<sup>1</sup>, D. G. Ostrow<sup>2</sup>, R. C. Stall<sup>3</sup>, M. W. Plankey<sup>4</sup>, <sup>1</sup>UCLA, Los Angeles, CA,  
<sup>2</sup>University of Chicago, Chicago, IL, <sup>3</sup>University of Pittsburgh, Pittsburgh, PA, <sup>4</sup>Georgetown  
University Medical Center, Washington, DC
- 53 *Pain medication use among a university sample from Lebanon: A closer look into sources, reasons, and potential correlates*  
D. Elsayed<sup>1</sup>, L. Ghandour<sup>1</sup>, S. Martins<sup>2</sup>, <sup>1</sup>Epidemiology and Population Health, American  
University of Beirut, Beirut, Lebanon, <sup>2</sup>Mental Health, Johns Hopkins Bloomberg School of  
Public Health, Baltimore, MD

### PHARMACOKINETICS, CHEMISTRY

- 54 *Gender differences in pharmacokinetics of buprenorphine: Involvement of weight and metabolism*  
D. E. Moody<sup>1</sup>, W. B. Fang<sup>1</sup>, J. Morrison<sup>1</sup>, E. F. McCance-Katz<sup>2</sup>, <sup>1</sup>Pharmacology and Toxicology,  
University of Utah, Salt Lake City, UT, <sup>2</sup>Psychiatry, University of California San Francisco,  
San Francisco, CA

- 55 *Sublingual administration of ALKS 33, a novel opioid receptor antagonist, does not alter buprenorphine pharmacokinetics*  
R. Turncliff<sup>1</sup>, R. Jones<sup>2</sup>, E. Fernandez<sup>2</sup>, A. Manari<sup>2</sup>, J. Ransom<sup>3</sup>, N. Chiang<sup>4</sup>, E. Ehrich<sup>1</sup>,  
<sup>1</sup>Alkermes, Inc, Waltham, MA, <sup>2</sup>University of California, San Francisco, San Francisco, CA,  
<sup>3</sup>Fast-Track Drugs & Biologics, N. Potomac, MD, <sup>4</sup>National Institute on Drug Abuse,  
Bethesda, MD
- 56 *Effects of alcohol on the pharmacokinetics of Remoxy<sup>®</sup>, an extended-release formulation of oxycodone, in healthy volunteers*  
A. de Kater<sup>1</sup>, G. L. Schoenhard<sup>1</sup>, V. Klutzaritz<sup>1</sup>, M. J. Lamson<sup>2</sup>, N. Friedmann<sup>1</sup>, <sup>1</sup>Pain  
Therapeutics, Inc., San Mateo, CA, <sup>2</sup>King Pharmaceuticals Research and Development,  
Cary, NC
- 57 *Accuracy of a method to quantify illicit intake of methamphetamine from urine*  
L. Li<sup>1</sup>, G. P. Galloway<sup>1</sup>, D. Verotta<sup>2</sup>, E. Everhart<sup>3</sup>, M. J. Baggott<sup>1</sup>, J. R. Coyle<sup>1</sup>, J. C. Lopez<sup>1</sup>,  
J. Mendelson<sup>1</sup>, <sup>1</sup>Addiction Pharmacology, California Pacific Medical Center Research  
Institute, San Francisco, CA, <sup>2</sup>Bioengineering and Therapeutic Sciences and Epidemiology and  
Biostatistics, UCSF, San Francisco, CA, <sup>3</sup>Langley Porter Psychiatric Institute, UCSF, San  
Francisco, CA
- 58 *Discovery of a novel SSRI scaffold from a lead compound identified by in silico screening*  
T. L. Nolan<sup>1,2</sup>, D. J. Lapinsky<sup>1</sup>, M. Indarte<sup>1</sup>, Y. Liu<sup>1</sup>, J. D. Madura<sup>2</sup>, C. K. Surratt<sup>1</sup>,  
<sup>1</sup>Pharmaceutical Sciences, Duquesne University, Pittsburgh, PA, <sup>2</sup>Chemistry & Biochemistry,  
Duquesne University, Pittsburgh, PA
- 59 *Preclinical antipsychostimulant and antidepressant properties of a monoamine transporter ligand identified via in silico screening*  
C. Surratt<sup>1</sup>, M. Indarte<sup>1,2</sup>, Y. Liu<sup>1</sup>, J. D. Madura<sup>2</sup>, J. N. Talbot<sup>3</sup>, <sup>1</sup>Division of Pharmaceutical  
Sciences, Mylan School of Pharmacy, Duquesne University, Pittsburgh, PA, <sup>2</sup>Department of  
Chemistry and Biochemistry, Duquesne University, Pittsburgh, PA, <sup>3</sup>Department of  
Biomedical and Pharmaceutical Sciences, Raabe School of Pharmacy, Ohio Northern  
University, Ada, OH
- 60 *Synthesis and optimization of selective N-phenylethyl piperazine analogues as sigma-2 receptor antagonists*  
W. Motel<sup>1</sup>, M. Small<sup>1</sup>, R. Matsumoto<sup>2</sup>, A. MacKerrell<sup>1</sup>, A. Coop<sup>1</sup>, <sup>1</sup>Pharmaceutical Sciences,  
University of Maryland, Baltimore, Baltimore, MD, <sup>2</sup>Pharmacy Department, West Virginia  
University, Morgantown, WV
- 61 *Synthesis of M-100907 a 5-HT<sub>2A</sub>R antagonist and WAY-163909 a 5-HT<sub>2C</sub>R agonist analogs*  
M. Shashack<sup>1</sup>, P. Seitz<sup>1</sup>, A. McGinnis<sup>1</sup>, K. Cunningham<sup>1</sup>, S. Gilbertson<sup>1,2</sup>, <sup>1</sup>Pharmacology and  
Toxicology, University of Texas Medical Branch, Galveston, TX, <sup>2</sup>Chemistry, University of  
Houston, Houston, TX
- 62 *Identification of volatile components in smokeless tobacco products using headspace solid phase microextraction and gas chromatography/mass spectrometry*  
P. G. Pande<sup>1</sup>, R. Daw<sup>1</sup>, A. Cox<sup>1</sup>, A. Seidenberg<sup>2</sup>, V. Rees<sup>2</sup>, G. Connolly<sup>2</sup>, B. Thomas<sup>1</sup>, <sup>1</sup>RTI  
International, RTP, NC, <sup>2</sup>Harvard School of Public Health, Boston, MA
- 63 *Analysis of herbal "Spice" mixtures containing synthetic cannabinoids using solid-phase microextraction and gas chromatography/mass spectrometry*  
B. F. Thomas, P. G. Pande, R. C. Daw, M. Grabenauer, J. L. Wiley, M. D. Mason, A. O. Cox,  
K. H. Davis, Research Triangle Institute, Research Triangle Park, NC

- 64 *Synthesis and monoamine transporter affinity of 3-aryl-3-arylmethoxytropene derivatives*  
H. Kaur<sup>1</sup>, S. Izenwasser<sup>2</sup>, D. Wade<sup>2</sup>, A. Housman<sup>2</sup>, G. Gulasey<sup>2</sup>, M. L. Trudell<sup>1</sup>, <sup>1</sup>Chemistry, University of New Orleans, New Orleans, LA, <sup>2</sup>Psychiatry, University of Miami Miller School of Medicine, Miami, FL
- 65 *Synthesis and biological evaluation of novel cannabinoid antagonists*  
A. Verma<sup>1</sup>, S. Izenwasser<sup>2</sup>, D. Wade<sup>2</sup>, C. Booth<sup>2</sup>, M. L. Trudell<sup>1</sup>, <sup>1</sup>Chemistry, University of New Orleans, New Orleans, LA, <sup>2</sup>Psychiatry, University of Miami Miller School of Medicine, Miami, FL
- 66 *Development of bivalent ligands for the CB1-Orexin 1 receptor heterodimers*  
Y. Zhang, D. Perrey, B. P. Gilmour, K. Warner, T. Langston, H. A. Navarro, B. F. Thomas, Research Triangle Institute, Research Triangle Park, NC
- 67 *Development and immunological validation of an oxycodone conjugate vaccine in rats*  
M. Pravetoni<sup>1,2</sup>, M. LeNaour<sup>4</sup>, P. S. Portoghese<sup>4,2</sup>, M. Raleigh<sup>3</sup>, T. Harmon<sup>1</sup>, P. R. Pentel<sup>1,2,3</sup>, <sup>1</sup>Minneapolis Medical Research Foundation, Minneapolis, MN, <sup>2</sup>Medicine, University of Minnesota, Minneapolis, MN, <sup>3</sup>Pharmacology, University of Minnesota, Minneapolis, MN, <sup>4</sup>Medicinal Chemistry, University of Minnesota, Minneapolis, MN

### ALCOHOL

- 68 *The dopamine stabilizer (-)-OSU6162 selectively decreases voluntary ethanol consumption in rats: Implications for a novel treatment of alcohol use disorder*  
P. Steensland<sup>1</sup>, I. Fredriksson<sup>1</sup>, J. Franck<sup>1</sup>, A. Carlsson<sup>2</sup>, <sup>1</sup>Clinical Neuroscience, Karolinska Institutet, Stockholm, Sweden, <sup>2</sup>The Sahlgrenska Academy, Gothenburg University, Gothenburg, Sweden
- 69 *Effects of alcohol on serotonin (5-HT<sub>3</sub>) receptor: The role of histone deacetylases and their inhibitor trichostatin A*  
M. Agudelo, N. Gandhi, Z. Saiyed, T. Samikkannu, V. Pichili, P. Khatavkar, A. Yndart-Arias, M. Nair, Florida International University, Miami, FL
- 70 *Decision-making and impulsivity in PTSD and co-occurring cocaine or alcohol dependence: Preliminary analyses*  
A. E. Waldrop<sup>1,2</sup>, B. A. Lasher<sup>2</sup>, J. Coetzee<sup>1</sup>, E. Herbst<sup>2,1</sup>, T. C. Neylan<sup>2,1</sup>, S. L. Batki<sup>2,1</sup>, <sup>1</sup>University of California, San Francisco, San Francisco, CA, <sup>2</sup>San Francisco VAMC, San Francisco, CA
- 71 *Executive cognitive dysfunction in rats with a history of ethanol dependence*  
G. Gonzalez-Cuevas, R. Martin-Fardon, F. Weiss, The Scripps Research Institute, La Jolla, CA
- 72 *Alcohol's effects on behavioral inhibition, risk-taking, and subjective effects in human moderate to heavy drinkers*  
R. L. Yankelevitz, S. H. Mitchell, Oregon Health & Science University, Portland, OR
- 73 *Using fMRI to evaluate change language in emerging adults: A translational perspective*  
A. D. McEachern<sup>1</sup>, S. W. Feldstein Ewing<sup>1</sup>, F. Filbey<sup>1,3</sup>, A. Sabbineni<sup>1</sup>, D. Truitt<sup>1</sup>, H. Mead<sup>1</sup>, K. Ingersoll<sup>2</sup>, K. Hutchison<sup>1</sup>, <sup>1</sup>The Mind Research Network, Albuquerque, NM, <sup>2</sup>University of Virginia, Charlottesville, VA, <sup>3</sup>University of Texas at Dallas, Dallas, TX

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- 74 *Efficacy of antidepressants in alcohol dependence with and without comorbid depression: A systematic review and meta-analysis*  
M. Farré<sup>1,2,3</sup>, D. Martinez-Sanvisens<sup>2,4</sup>, R. Martinez-Riera<sup>2,4</sup>, F. Fonseca<sup>2,4</sup>, P. Rossi<sup>2,4</sup>, C. Castillo<sup>2,4</sup>, M. Torrens<sup>2,4,5</sup>, <sup>1</sup>Pharmacology Research Unit. Neuropsychopharmacology Program, Institut de Recerca Hospital del Mar (IMIM) - Parc de Salut Mar, Barcelona, Spain, <sup>2</sup>Substance Use Disorders Research Group. Neuropsychopharmacology Program, Institut de Recerca Hospital del Mar (IMIM), Barcelona, Spain, <sup>3</sup>Department of Pharmacology, Universitat Autònoma de Barcelona, Barcelona, Spain, <sup>4</sup>Institut de Neuropsiquiatria i Addiccions (INAD), Parc de Salut Mar, Barcelona, Spain, <sup>5</sup>Department of Psychiatry, Universitat de Barcelona, Barcelona, Spain
- 75 *Sleep problems and suicide attempts in adults seeking alcohol use disorder treatment in Poland*  
A. Klimkiewicz<sup>1</sup>, A. S. Bohnert<sup>1,2</sup>, K. Brower<sup>1</sup>, M. Wojnar<sup>1,3</sup>, K. Conner<sup>4</sup>, M. A. Ilgen<sup>1,2</sup>, F. C. Blow<sup>1,2</sup>, <sup>1</sup>Psychiatry, University of Michigan, Ann Arbor, MI, <sup>2</sup>Department of Veterans Affairs, Ann Arbor, MI, <sup>3</sup>Psychiatry, Medical University of Warsaw, Warsaw, Poland, <sup>4</sup>University of Rochester Medical Center, Rochester, NY
- 76 *Alcohol dependence clinical features and experiences observed soon after onset of drinking: Male-female variations*  
O. A. Adelaja, J. C. Anthony, Epidemiology, Michigan State University, East Lansing, MI
- 77 *Male-female variation in early receipt of alcohol treatment services soon after drinking onset*  
B. Ahmedani<sup>1</sup>, J. C. Anthony<sup>2</sup>, <sup>1</sup>Center for Health Services Research, Henry Ford Health System, Detroit, MI, <sup>2</sup>Epidemiology, Michigan State University, East Lansing, MI
- 78 *Beliefs significantly associated with the consumption of alcohol in school students in Spain*  
F. J. Bueno-Cañigral<sup>1</sup>, C. C. Morales-Manrique<sup>2</sup>, R. Aleixandre-Benavent<sup>2</sup>, J. C. Valderrama-Zurián<sup>3,2</sup>, <sup>1</sup>Plan Municipal Drogodependencias (PMD), Ayuntamiento de Valencia, Valencia, Spain, <sup>2</sup>Unidad de Información e Investigación Social y Sanitaria (UISYS), Universitat de València, Valencia, Spain, <sup>3</sup>IVASPE, Generalitat Valenciana, Valencia, Spain
- 79 *Motives associated with consumption of alcohol among school students in Spain. Differences by gender*  
C. C. Morales-Manrique<sup>1</sup>, F. J. Bueno-Cañigral<sup>2</sup>, J. C. Valderrama-Zurián<sup>3,1</sup>, R. Aleixandre-Benavent<sup>1</sup>, <sup>1</sup>Unidad de Información e Investigación Social y Sanitaria (UISYS), Universitat de València, Valencia, Spain, <sup>2</sup>Plan Municipal Drogodependencias (PMD) Ayuntamiento de Valencia, Valencia, Spain, <sup>3</sup>IVASPE Generalitat Valenciana, Valencia, Spain
- 80 *Relationship of binge drinking to drug use among nighttime weekend drivers*  
R. Voas, T. Kelley-Baker, E. Romano, J. Lacey, K. Jones, Pacific Institute for Research and Evaluation, Calverton, MD
- 81 *Knowledge about legal blood alcohol content limits for drunk driving in a sample of Brazilian drivers*  
T. V. Conceicao<sup>1</sup>, R. De Boni<sup>1</sup>, P. Duarte<sup>2</sup>, F. Pechansky<sup>1</sup>, <sup>1</sup>Center for Drug & Alcohol Research-UFRGS, Porto Alegre, Brazil, <sup>2</sup>Brazilian Secretariat for Drug Policies, Brasilia, Brazil
- 82 *The geography of drug arrests, violence and alcohol in Boston*  
R. Lipton<sup>1</sup>, X. Yang<sup>2</sup>, <sup>1</sup>Department of Emergency Medicine, University of Michigan, Ann Arbor, MI, <sup>2</sup>Department of Emergency Medicine, Beth Israel Deaconess Medical Center, Boston, MA
- 83 *Addressing intimate partner violence perpetration in substance use disorder treatment programs in California*  
P. Sun<sup>1,2</sup>, H. R. Valenstein<sup>1,2</sup>, R. C. Cronkite<sup>1,2</sup>, C. Timko<sup>1,2</sup>, <sup>1</sup>Center for Health Care Evaluation, VA Palo Alto Health Care System, Palo Alto, CA, <sup>2</sup>Stanford University, Stanford, CA

- 84 *Vivitrol use in Los Angeles County*  
D. A. Crevecœur-MacPhail<sup>1</sup>, J. Viernes<sup>2</sup>, J. Barger<sup>2</sup>, S. Cousins<sup>1</sup>, W. Sugita<sup>2</sup>, D. De Leon<sup>2</sup>, J. Sorg<sup>3</sup>, K. Bachrach<sup>3</sup>, J. Kirby<sup>4</sup>, C. Loch<sup>5</sup>, S. Parker<sup>5</sup>, M. Palmer<sup>2</sup>, R. Rawson<sup>1</sup>, <sup>1</sup>NPI, UCLA ISAP, Los Angeles, CA, <sup>2</sup>Los Angeles County Public Health, Substance Abuse Prevention and Control, Alhambra, CA, <sup>3</sup>Tarzana Treatment Center, Tarzana, CA, <sup>4</sup>Behavioral Health Services, Gardena, CA, <sup>5</sup>Prototypes, Pomona, CA
- 85 *Knowledge of informed consent increases proportionately with education*  
R. D. VanNess<sup>1</sup>, C. M. Geppert<sup>4</sup>, M. P. Bogenschutz<sup>3</sup>, J. S. Tonigan<sup>3</sup>, B. S. McCrady<sup>2,3</sup>, K. Bradley<sup>1</sup>, <sup>1</sup>Biomedical Research Institute of New Mexico, Albuquerque, NM, <sup>2</sup>Psychology, University of New Mexico, Albuquerque, NM, <sup>3</sup>Center on Alcoholism, Substance Abuse and Addictions, University of New Mexico, Albuquerque, NM, <sup>4</sup>Psychiatry, University of New Mexico, Albuquerque, NM
- 86 *The relationship between services delivered and substance use outcomes in New Mexico's Screening, Brief Intervention, Referral and Treatment Initiative*  
J. Gryczynski<sup>1</sup>, S. G. Mitchell<sup>1</sup>, T. Peterson<sup>2</sup>, A. Gonzales<sup>2</sup>, A. Moseley<sup>2</sup>, R. P. Schwartz<sup>1</sup>, <sup>1</sup>Friends Research Institute, Baltimore, MD, <sup>2</sup>Sangre de Cristo Community Health Partnership, Santa Fe, NM
- 87 *Applying web-based technology to disseminate Motivational Interviewing: A usability study*  
M. A. Wilhelm<sup>1</sup>, P. K. Horvath<sup>2</sup>, J. A. Hartje<sup>1</sup>, <sup>1</sup>Center for the Application of Substance Abuse Technologies, University of Nevada, Reno, NV, <sup>2</sup>Department of Psychiatry, Virginia Commonwealth University, Richmond, VA
- 88 *Examining FASD Training of Trainers participants' stigmatizing attitudes toward alcohol use in women of childbearing age*  
J. A. Hartje<sup>1</sup>, N. A. Roget<sup>1</sup>, M. S. Berry<sup>1</sup>, A. H. Skinstad<sup>2</sup>, <sup>1</sup>University of Nevada, Reno, NV, <sup>2</sup>University of Iowa, Iowa City, IA
- 89 *Putting down the bottle: Exploring the adaptability of skills used to decrease problematic drinking among heroin and cocaine users*  
M. Scherer, R. C. Trenz, P. Harrell, B. E. Mancha, W. W. Latimer, Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD
- 90 *Stability in pro-abstinence behavior measures: 18-years follow-up after intensive 3-month alcoholism treatment program*  
M. Radovanovic<sup>1</sup>, V. Rus<sup>2</sup>, M. Rus Makovec<sup>1</sup>, <sup>1</sup>Alcoholism Treatment Center, University Psychiatric Hospital, Ljubljana, Slovenia, <sup>2</sup>Department of Psychology, University of Ljubljana, Ljubljana, Slovenia
- 91 *Measuring the measure: Does the VA SUD CoC Performance Measure actually measure continuity of care?*  
J. Listerud, D. Vallone, M. Kling, D. Oslin, Psychiatry, U. of Pennsylvania, Philadelphia, PA
- 92 *Alcohol and other drug use across international borders*  
P. Insúa<sup>1</sup>, M. Lledó<sup>2</sup>, I. Germán<sup>3</sup>, A. A. Colina<sup>4</sup>, I. A. Colina<sup>4</sup>, C. Olaizola<sup>4</sup>, J. P. Daulouede<sup>4</sup>, <sup>1</sup>Faculté de Psychologie, Université du Pays Basque/ Euskal Herriko Unibertsitatea, Gipuzkoa, France, <sup>2</sup>École de Travail Social, Université du Pays Basque/ Euskal Herriko Unibertsitatea, Gipuzkoa, France, <sup>3</sup>Institut Basque de Criminologie (IVAC) (UPV/EHU), Gipuzkoa, Spain, <sup>4</sup>Centre de soins en addictologie, Bayonne, France

### COMORBIDITY

- 93 *Efficacy of antidepressants in cocaine, implications of comorbid depression: Systematic review and meta-analysis*  
M. Torrens<sup>1,2,3</sup>, D. Martinez-Sanvisens<sup>1,2</sup>, R. Martinez-Riera<sup>1,2</sup>, F. Fonseca<sup>1,2</sup>, P. Rossi<sup>1,2</sup>, C. Castillo<sup>1,2</sup>, M. Farré<sup>2,4,5</sup>, <sup>1</sup>Institut de Neuropsiquiatria i Addiccions (INAD), Parc de Salut Mar, Barcelona, Spain, <sup>2</sup>Substance Use Disorders Research Group Neuropsychopharmacology Program, Institut de Recerca Hospital del Mar (IMIM), Barcelona, Spain, <sup>3</sup>Department of Psychiatry, Universitat Autònoma de Barcelona, Barcelona, Spain, <sup>4</sup>Pharmacology Research Unit. Neuropsychopharmacology Program, Institut de Recerca Hospital del Mar (IMIM) - Parc de Salut Mar, Barcelona, Spain, <sup>5</sup>Department of Pharmacology, Universitat Autònoma de Barcelona, Barcelona, Spain
- 94 *Length of treatment is associated with decrease in tobacco use in comorbid major depression and alcoholism*  
I. Salloum<sup>1</sup>, A. Douaihy<sup>2</sup>, L. Kirisci<sup>3</sup>, J. R. Cornelius<sup>2</sup>, <sup>1</sup>Psychiatry, University of Miami Miller School of Medicine, Miami, FL, <sup>2</sup>Psychiatry, University of Pittsburgh School of Medicine, Pittsburgh, PA, <sup>3</sup>Pharmaceutical Sciences, University of Pittsburgh School of Pharmacy, Pittsburgh, PA
- 95 *Does depression interfere with contingency-management treatment for pregnant cigarette smokers?*  
A. A. Lopez, S. T. Higgins, S. H. Heil, Y. Washio, G. J. Badger, J. M. Skelly, M. E. Lynch, L. J. Solomon, I. M. Bernstein, University of Vermont, Burlington, VT
- 96 *Psychological symptoms and modafinil effects on smoking cessation*  
C. A. Martin<sup>1,3</sup>, G. Guenther<sup>1</sup>, R. Charnigo<sup>2</sup>, S. Batten<sup>1</sup>, J. A. Lile<sup>3</sup>, T. H. Kelly<sup>3,1</sup>, <sup>1</sup>Psychiatry, University of Kentucky, Lexington, KY, <sup>2</sup>College of Public Health, University of Kentucky, Lexington, KY, <sup>3</sup>Behavioral Science, University of Kentucky College of Medicine, Lexington, KY
- 97 *Severity of psychiatric disorders in tobacco users*  
V. Beltran<sup>2</sup>, A. A. Colina<sup>2</sup>, C. Maitre<sup>1</sup>, M. Auriacombe<sup>1</sup>, J. P. Daulouede<sup>1</sup>, <sup>1</sup>Psychiatrie, Université Victor Segalen Bordeaux 2, Bordeaux, France, <sup>2</sup>Centre d'Addictologie, Bayonne, France
- 98 *Tobacco use characteristics and quit attempts among smokers with serious mental illness*  
N. J. Hickman, J. J. Prochaska, Psychiatry, University of California, San Francisco, San Francisco, CA
- 99 *Nicotine reinforcement before and after 72-h smoking abstinence in smokers with schizophrenia*  
J. Tidey, S. Colby, Psychiatry & Human Behavior, Brown University, Providence, RI
- 100 *Shorter interpuff interval associated with greater nicotine intake in smokers with and without schizophrenia*  
J. M. Williams<sup>1,2</sup>, K. K. Gandhi<sup>1,2</sup>, S. Kumar<sup>1</sup>, S. E. Lu<sup>2,1</sup>, <sup>1</sup>Psychiatry, Robert Wood Johnson Medical School, New Brunswick, NJ, <sup>2</sup>UMDNJ School of Public Health, Piscataway, NJ
- 101 *The impact of cannabis use on cognitive functioning in patients with schizophrenia*  
M. Yucel<sup>1,2</sup>, E. Bora<sup>1</sup>, D. I. Lubman<sup>3</sup>, N. Solowij<sup>4,5</sup>, W. J. Brewer<sup>2</sup>, S. Cotton<sup>2</sup>, P. Conus<sup>6</sup>, M. J. Takagi<sup>1,2</sup>, A. Fornito<sup>1</sup>, S. J. Wood<sup>1</sup>, P. D. McGorry<sup>2</sup>, C. Pantelis<sup>1</sup>, <sup>1</sup>Melbourne Neuropsychiatry Centre, University of Melbourne, Melbourne, VIC, Australia, <sup>2</sup>Orygen Youth Health Research Centre, University of Melbourne, Melbourne, VIC, Australia, <sup>3</sup>Turning Point Alcohol and Drug Centre, Monash University, Melbourne, VIC, Australia, <sup>4</sup>School of Psychology, University of Wollongong, Sydney, NSW, Australia, <sup>5</sup>Schizophrenia Research Institute, Sydney, NSW, Australia, <sup>6</sup>Université de Lausanne, Clinique de Cery, Switzerland

- 102 *An examination of self-stigma in schizophrenic patients with a substance abuse disorder*  
S. Rodrigues<sup>1,3</sup>, M. Serper<sup>3</sup>, M. Hobart<sup>2</sup>, A. Lennox<sup>2,1</sup>, J. Vessella<sup>1</sup>, G. Gonzalez<sup>2</sup>, D. Ziedonis<sup>2</sup>, D. Smelson<sup>1,2</sup>, <sup>1</sup>Edith Nourse Rogers Memorial Veterans Hospital, Bedford, MA, <sup>2</sup>Psychiatry, University of Massachusetts Medical School, Worcester, MA, <sup>3</sup>Psychology, Hofstra University, Hempstead, NY
- 103 *Naltrexone effects on cannabis and cocaine use in alcohol-dependent patients with schizophrenia: Preliminary analysis*  
S. L. Batki<sup>1,2</sup>, Z. Szombathyne Meszaros<sup>2</sup>, J. Dimmock<sup>2</sup>, R. Ploutz-Snyder<sup>3</sup>, <sup>1</sup>UCSF - SF VAMC, San Francisco, CA, <sup>2</sup>SUNY Upstate, Syracuse, NY, <sup>3</sup>USRA NASA, Houston, TX
- 104 *Predictors of legal problems among patients with bipolar disorder and alcoholism*  
E. M. Ramos<sup>1</sup>, A. Douaihy<sup>2</sup>, R. Caceda<sup>1</sup>, J. R. Cornelius<sup>2</sup>, I. M. Salloum<sup>1</sup>, <sup>1</sup>Psychiatry and Behavioral Sciences, University of Miami Miller School of Medicine, Miami, FL, <sup>2</sup>Psychiatry, University of Pittsburgh Medical Center, Pittsburgh, PA
- 105 *Conjoint development of antisocial behaviors and marijuana use from adolescence into young adulthood*  
M. J. Worley<sup>1</sup>, S. A. Brown<sup>1</sup>, M. C. Stallings<sup>2</sup>, C. J. Hopfer<sup>2</sup>, J. K. Hewitt<sup>2</sup>, <sup>1</sup>University of California, San Diego, La Jolla, CA, <sup>2</sup>University of Colorado, Denver, Denver, CO
- 106 *Does marijuana use trajectory predict self-reported depressive symptoms among community-based adults followed for 20 years (the CARDIA study)?*  
Y. Khodneva<sup>1</sup>, M. Pletcher<sup>3</sup>, M. Safford<sup>1</sup>, J. Schumacher<sup>1</sup>, J. Tucker<sup>1</sup>, S. Kertesz<sup>2,1</sup>, <sup>1</sup>U. Ala. Birmingham, Birmingham, AL, <sup>2</sup>Birmingham VA Med Ctr, Birmingham, AL, <sup>3</sup>U Calif SF, San Francisco, CA
- 107 *Affective instability predicts pathways to alcohol and marijuana use disorders in young adults*  
L. A. Hulvershorn<sup>1</sup>, P. Finn<sup>2</sup>, <sup>1</sup>Psychiatry, Indiana University School of Medicine, Indianapolis, IN, <sup>2</sup>Psychological and Brain Sciences, Indiana University, Bloomington, IN
- 108 *Psychomotor agitation in substance dependence*  
A. M. Leventhal<sup>1</sup>, J. Gelernter<sup>2</sup>, D. Oslin<sup>3</sup>, R. F. Anton<sup>4</sup>, L. A. Farrer<sup>5</sup>, H. R. Kranzler<sup>6</sup>, <sup>1</sup>University of Southern California, Los Angeles, CA, <sup>2</sup>Yale University School of Medicine, New Haven, CT, <sup>3</sup>Philadelphia VAMC and University of Pennsylvania, Philadelphia, PA, <sup>4</sup>Medical University of South Carolina, Charleston, SC, <sup>5</sup>Boston University Schools of Medicine and Public Health, Boston, MA, <sup>6</sup>University of Connecticut Health Center, Farmington, CT
- 109 *Predicting substance use among children with ADHD: Clinical utility of impairment indices*  
P. A. Graziano<sup>1</sup>, K. Derefinko<sup>1</sup>, E. Gnagy<sup>1</sup>, B. Molina<sup>2</sup>, W. Pelham<sup>1</sup>, <sup>1</sup>Florida International University, Miami, FL, <sup>2</sup>University of Pittsburgh, Pittsburgh, PA
- 110 *Attention-deficit/hyperactivity disorder subtypes in cocaine-dependent individuals: Frequency and characteristics*  
M. Mooney<sup>1</sup>, F. Levin<sup>2</sup>, D. Babb<sup>1</sup>, D. Brooks<sup>2</sup>, A. Mahony<sup>2</sup>, J. Grabowski<sup>1</sup>, <sup>1</sup>Psychiatry, University of Minnesota, Minneapolis, MN, <sup>2</sup>Psychiatry, Columbia University, New York, NY
- 111 *Adult ADHD diagnosis accuracy in substance use disorder clients*  
M. Malivert<sup>1</sup>, M. Fatseas<sup>1,2</sup>, C. Denis<sup>1,2</sup>, M. Auriacombe<sup>1,2</sup>, <sup>1</sup>Addiction Psychiatry (UMSR-CNRS), Universite Victor Segalen Bordeaux 2, Bordeaux, France, <sup>2</sup>Addiction Treatment Center, CHCP, CHU, Bordeaux, France
- 112 *Psychiatric comorbidities as a function of substance type and gender within residential substance use treatment*  
A. N. Banducci, K. W. Chen, L. Guller, R. J. Macatee, C. W. Lejuez, University of Maryland, College Park, MD



- 113 *Childhood trauma, substance use, and mental disorders patterns among homeless in British Columbia*  
C. G. Schuetz, C. Taplin, K. Lee, R. M. Krausz, Psychiatry, University of British Columbia, Vancouver, BC, Canada
- 114 *Screening for co-occurring mental disorders: From research validation to knowledge translation*  
B. Rush<sup>1</sup>, S. Castel<sup>2</sup>, B. Brands<sup>1,3</sup>, <sup>1</sup>Health Systems Research, Centre for Addiction and Mental Health, Toronto, ON, Canada, <sup>2</sup>Dept. of Psychiatry, Sunnybrook Health Sciences Centre, Toronto, ON, Canada, <sup>3</sup>Health Canada, Ottawa, ON, Canada
- 115 *Factors associated with mental health clinicians' referrals to 12-step groups*  
H. Matusow<sup>1</sup>, A. Rosenblum<sup>1</sup>, C. Fong<sup>1</sup>, H. Vogel<sup>3</sup>, S. Magura<sup>2</sup>, <sup>1</sup>NDRI, NY, NY, <sup>2</sup>WMU, Kalamazoo, MI, <sup>3</sup>DTR, Inc., Brooklyn, NY
- 116 *Factors associated with medication adherence among psychiatric outpatients with substance abuse histories*  
S. Magura<sup>1</sup>, A. Rosenblum<sup>2</sup>, C. Fong<sup>2</sup>, <sup>1</sup>Western Michigan University, Kalamazoo, MI, <sup>2</sup>NDRI, New York, NY
- 117 *Improving attendance to specialized psychiatric services offered in a methadone treatment program*  
R. K. Brooner, M. Kidorf, V. King, J. Peirce, Johns Hopkins University, Baltimore, MD
- 118 *Prevalence of mood and substance use disorders among patients seeking office-based buprenorphine*  
J. Savant<sup>2</sup>, D. Barry<sup>1</sup>, C. Cutter<sup>1</sup>, T. Fazzino<sup>2</sup>, R. Schottenfeld<sup>1</sup>, D. Fiellin<sup>1</sup>, <sup>1</sup>Yale University School of Medicine, New Haven, CT, <sup>2</sup>APT Foundation Inc, New Haven, CT

### ADOLESCENTS II

- 119 *"This is not who I want to be:" experiences of opioid-dependent youth prior to, and during, combined buprenorphine and behavioral treatment*  
S. Moore, H. Guarino, L. A. Marsch, National Development and Research Institutes, Inc., New York, NY
- 120 *Treatment outcomes with relapse prevention medications for opioid dependence in youth*  
M. Fishman<sup>1,2</sup>, E. Curran<sup>2</sup>, S. Shah<sup>2</sup>, C. Perry-Parrish<sup>1,2</sup>, <sup>1</sup>Johns Hopkins University, Baltimore, MD, <sup>2</sup>Mountain Manor Treatment Center, Baltimore, MD
- 121 *Absence of gender differences in treatment with relapse prevention medications for opioid dependence in youth*  
E. Curran<sup>2</sup>, C. Perry-Parish<sup>1,2</sup>, S. Shah<sup>2</sup>, M. Fishman<sup>1,2</sup>, <sup>1</sup>Johns Hopkins University, Baltimore, MD, <sup>2</sup>Mountain Manor Treatment Center, Baltimore, MD
- 122 *Benefits of treatment during treatment: Estimating concurrent effects*  
R. Ramchand<sup>1</sup>, B. A. Griffin<sup>1</sup>, D. McCaffrey<sup>3</sup>, D. Almirall<sup>2</sup>, A. Morral<sup>1</sup>, <sup>1</sup>RAND, Arlington, VA, <sup>2</sup>Institute for Social Research, University of Michigan, Ann Arbor, MI, <sup>3</sup>RAND, Pittsburgh, PA
- 123 *Development of a novel high-school-based intervention to motivate a tobacco-free lifestyle*  
S. Krishnan-Sarin<sup>1</sup>, K. M. Cummings<sup>2</sup>, D. Cavallo<sup>1</sup>, A. Hyland<sup>2</sup>, J. Graf<sup>2</sup>, A. Liss<sup>1</sup>, G. Kong<sup>1</sup>, C. Connell<sup>1</sup>, J. Pflieger<sup>1</sup>, D. Camenga<sup>1</sup>, A. Brown<sup>2</sup>, P. Hage<sup>2</sup>, M. Travers<sup>2</sup>, <sup>1</sup>Yale University School of Medicine, New Haven, CT, <sup>2</sup>Roswell Park Cancer Institute, Rochester, NY

- 124 *Smoking, alcohol, drugs and delinquency among high school students in Cape Town, South Africa*  
T. Carney<sup>1</sup>, B. Myers<sup>1,4</sup>, J. Louw<sup>2</sup>, C. Lombard<sup>3</sup>, A. Flisher<sup>4</sup>, <sup>1</sup>Alcohol and Drug Abuse Research Unit, Medical Research Council, Cape Town, South Africa, <sup>2</sup>Department of Psychology, University of Cape Town, Cape Town, South Africa, <sup>3</sup>Biostatistics Unit, Medical Research Council, Cape Town, South Africa, <sup>4</sup>Department of Psychiatry and Mental Health, University of Cape Town, Cape Town, South Africa
- 125 *Tobacco use patterns among adolescents entering substance abuse treatment*  
V. H. Coleman-Cowger, Research, Chestnut Health Systems, Normal, IL
- 126 *Tobacco use among African-American youth being treated for behavioral healthcare issues*  
A. Breland<sup>1</sup>, J. R. Koch<sup>1</sup>, J. Irons<sup>2</sup>, <sup>1</sup>Institute for Drug and Alcohol Studies, Virginia Commonwealth University, Richmond, VA, <sup>2</sup>Department of Psychology, James Madison University, Harrisonburg, VA
- 127 *The dark side of sniffing: Paint color affects intoxication experiences among adolescent inhalant users*  
M. Takagi<sup>1</sup>, D. I. Lubman<sup>2</sup>, M. Yücel<sup>1</sup>, <sup>1</sup>Psychiatry, University of Melbourne, Carlton South, VIC, Australia, <sup>2</sup>Turning Point Alcohol and Drug Centre, Fitzroy, VIC, Australia
- 128 *The development of methamphetamine use disorder in a clinically ascertained longitudinal sample*  
C. Hartman<sup>1</sup>, S. Salomonsen-Sautel<sup>1</sup>, T. Crowley<sup>1</sup>, R. Corley<sup>2</sup>, J. Sakai<sup>1</sup>, A. Hoffenberg<sup>1</sup>, C. Thurstone<sup>3</sup>, M. Stallings<sup>2</sup>, C. Hopfer<sup>1</sup>, <sup>1</sup>University of Colorado Denver, Aurora, CO, <sup>2</sup>University of Colorado, Boulder, CO, <sup>3</sup>Denver Health Authority, Denver, CO
- 129 *Progression of polysubstance abuse and dependence symptoms in a longitudinal clinical sample*  
J. Bricker<sup>1</sup>, S. Salomonsen-Sautel<sup>1</sup>, S. Min<sup>1</sup>, R. Corley<sup>2</sup>, M. Stallings<sup>2</sup>, J. Hewitt<sup>2</sup>, T. Crowley<sup>1</sup>, C. Hopfer<sup>1</sup>, <sup>1</sup>UC Denver, Aurora, CO, <sup>2</sup>Institute for Behavioral Genetics, Boulder, CO
- 130 *Prospective study of ADHD and risk for adolescent and young adult drug abuse*  
K. Winters<sup>1,2</sup>, S. Lee<sup>1</sup>, G. Realmuto<sup>1</sup>, G. August<sup>1</sup>, <sup>1</sup>University of Minnesota Medical School, Minneapolis, MN, <sup>2</sup>Treatment Research Institute, Philadelphia, PA
- 131 *The role of conduct disorder in initiation of substance use*  
C. Hopfer<sup>1</sup>, S. Salomonsen-Sautel<sup>1</sup>, S. Min<sup>1</sup>, S. Mikulich-Gilbertson<sup>1</sup>, M. McQueen<sup>2</sup>, T. Crowley<sup>1</sup>, S. Young<sup>2</sup>, R. Corley<sup>2</sup>, J. Sakai<sup>1</sup>, A. Hoffenberg<sup>2</sup>, C. Thurstone<sup>3</sup>, C. Hartman<sup>1</sup>, J. Hewitt<sup>2</sup>, M. Stallings<sup>2</sup>, <sup>1</sup>Psychiatry, University of Colorado, Aurora, CO, <sup>2</sup>University of Colorado, Boulder, CO, <sup>3</sup>Denver Health Authority, Denver, CO
- 132 *Substance-dependent, conduct-disordered adolescents: Severity of diagnosis does not predict future incarceration risk*  
A. S. Hoffenberg<sup>1</sup>, S. Salomonsen-Sautel<sup>1</sup>, N. Beckman<sup>3</sup>, R. Corley<sup>2</sup>, M. Stallings<sup>2</sup>, T. Crowley<sup>1</sup>, S. Brown<sup>3</sup>, C. Hopfer<sup>1</sup>, <sup>1</sup>Psychiatry, University of Colorado, Denver, CO, <sup>2</sup>Institute of Behavioral Genetics, Boulder, CO, <sup>3</sup>University of California at San Diego, San Diego, CA
- 133 *Drug misuse, violence, and HIV risk among youth in an urban Emergency Department*  
L. S. Massey<sup>1</sup>, L. Whiteside<sup>1</sup>, M. Newton<sup>1</sup>, M. Walton<sup>2</sup>, M. Zimmerman<sup>3</sup>, F. Blow<sup>2,4</sup>, B. Booth<sup>5,6</sup>, R. Cunningham<sup>1</sup>, <sup>1</sup>Emergency Medicine, University of Michigan, Ann Arbor, MI, <sup>2</sup>Psychiatry, University of Michigan, Ann Arbor, MI, <sup>3</sup>School of Public Health, University of Michigan, Ann Arbor, MI, <sup>4</sup>Department of Veterans Affairs, Ann Arbor, MI, <sup>5</sup>Department of Veterans Affairs, Little Rock, AR, <sup>6</sup>Psychiatry, University of Arkansas for Medical Sciences, Little Rock, AR

- 134 *Investigating the complex relations between culture and substance use: A preliminary model with high risk adolescents*  
H. Mead<sup>1</sup>, S. Feldstein Ewing<sup>1</sup>, A. McEachern<sup>1</sup>, E. DeVargas<sup>1</sup>, A. Ortiz-Briggs<sup>1</sup>, K. Ingersoll<sup>2</sup>, A. Bryan<sup>1</sup>, K. Hutchison<sup>1</sup>, <sup>1</sup>Mind Research Network, Albuquerque, NM, <sup>2</sup>University of Virginia, Charlottesville, VA
- 135 *Substance abuse problems among minority teens presenting to a general outpatient psychiatry clinic*  
L. Herman<sup>1,2</sup>, D. Haller<sup>1,2</sup>, M. Acosta<sup>3</sup>, K. Winters<sup>4</sup>, R. Stinchfield<sup>4</sup>, <sup>1</sup>St. Luke's - Roosevelt Hospital, New York, NY, <sup>2</sup>Columbia University, New York, NY, <sup>3</sup>NDRI, New York, NY, <sup>4</sup>University of Minnesota, Minneapolis, MN
- 136 *Seeking online information about drugs/alcohol/tobacco by Jewish and Arab schoolchildren in Israel: Who does, who doesn't and who wants to?*  
Y. Neumark, C. Lopez-Quintero, B. Feldman, L. Flum, R. Shtarkshall, Braun School of Public Health, Hebrew University-Hadassah, Jerusalem, Israel
- 137 *Drug use resilience and its determinants among school adolescents in Bogota, Colombia*  
C. Lopez-Quintero, Y. Neumark, Braun School of Public Health, Hebrew University of Jerusalem, Jerusalem, Israel
- 138 *A latent transition analysis of childhood maltreatment and patterns of adolescent substance use*  
S. H. Shin, School of Social Work, Boston University, Boston, MA
- 139 *Autonomy and relatedness among substance-using mothers and their children*  
A. Letcher, N. Slesnick, Human Development and Family Science, The Ohio State University, Columbus, OH
- 140 *Three-month efficacy of a brief intervention for reducing marijuana use and consequences among adolescents presenting to indigent primary care clinics*  
K. M. Bohnert<sup>1,2</sup>, M. A. Walton<sup>2</sup>, K. Barry<sup>1,2</sup>, S. T. Chermack<sup>1,2</sup>, R. A. Zucker<sup>2</sup>, M. A. Zimmerman<sup>2</sup>, B. M. Booth<sup>3,4</sup>, F. C. Blow<sup>1,2</sup>, <sup>1</sup>SMITREC, VA Ann Arbor, Ann Arbor, MI, <sup>2</sup>Psychiatry, University of Michigan Medical School, Ann Arbor, MI, <sup>3</sup>VA Little Rock, Little Rock, AR, <sup>4</sup>University of Arkansas for Medical Sciences, Little Rock, AR

### OPIOIDS: HUMAN I

- 141 *Impact of inpatient research participation on subsequent heroin use patterns*  
P. Roux<sup>1,2</sup>, C. Tindall<sup>1</sup>, J. Murray<sup>1</sup>, S. K. Vosburg<sup>1</sup>, P. Saccone<sup>1</sup>, M. A. Sullivan<sup>1</sup>, J. M. Manubay<sup>1</sup>, Z. D. Cooper<sup>1</sup>, J. D. Jones<sup>1</sup>, R. D. Foltin<sup>1</sup>, S. D. Comer<sup>1</sup>, <sup>1</sup>SURC, Columbia University, New York, NY, <sup>2</sup>SE4S, Inserm U912, Marseille, France
- 142 *Repeatability of laboratory stressors in heroin users: Early vs. mid treatment*  
M. L. Jobes, A. R. Pulaski, J. Chang, D. H. Epstein, K. A. Phillips, K. L. Preston, NIDA, Baltimore, MD
- 143 *Self-reports of heroin users who continue to use heroin after taking naltrexone for extended-release (Vivitrol®): A pilot study*  
A. DeFulio, L. Long, K. Mackowick, A. Umbricht, M. Fingerhood, G. E. Bigelow, K. Silverman, Johns Hopkins University School of Medicine, Baltimore, MD
- 144 *Effects of tizanidine and nifedipine in methadone-maintained humans under a naloxone novel-response discrimination procedure*  
A. Oliveto, N. Sanders, M. J. Mancino, J. B. Guise, W. K. Bickel, W. B. Gentry, University of Arkansas for Medical Sciences, Little Rock, AR
- 145 *Abuse liability indices across repeated alfentanil exposures in healthy normals*  
D. A. Tompkins, G. E. Bigelow, M. T. Smith, E. C. Strain, Psychiatry, Johns Hopkins University School of Medicine, Baltimore, MD

- 146 *Novel opioid receptor antagonist, ALKS 33, co-administered with buprenorphine blocks  $\mu$  agonist effects*  
R. Jones<sup>1</sup>, E. Fernandez<sup>1</sup>, A. Manari<sup>1</sup>, R. Turncliff<sup>2</sup>, J. Ransom<sup>3</sup>, N. Chiang<sup>4</sup>, <sup>1</sup>University of California, San Francisco, San Francisco, CA, <sup>2</sup>Alkermes, Inc., Waltham, MA, <sup>3</sup>Fast-Track Drugs & Biologics, N. Potomac, MD, <sup>4</sup>National Institute on Drug Abuse, Bethesda, MD
- 147 *Inhibitory control indexes early-in-treatment abstinence among opioid-dependent young adults treated with buprenorphine*  
G. Gonzalez<sup>1</sup>, C. Hinchey<sup>1</sup>, S. Gillespie<sup>2</sup>, E. Sophis<sup>2</sup>, D. Smelson<sup>1,3</sup>, G. DiGirolamo<sup>2</sup>, <sup>1</sup>Psychiatry, University of Massachusetts Medical School, Worcester, MA, <sup>2</sup>Psychology, College of the Holy Cross, Worcester, MA, <sup>3</sup>VA National Center for Homelessness Among Veterans, Edith Nourse Rogers Memorial VA, Bedford, MA
- 148 *Patterns of memory impairments in a sample of active heroin users in Penang, Malaysia*  
S. Azimi Alamdari<sup>1</sup>, B. Vicknasingam<sup>1</sup>, M. C. Chawarski<sup>2</sup>, <sup>1</sup>Centre for Drug Research, University Sains Malaysia, Minden, Malaysia, <sup>2</sup>Psychiatry, Yale University, New Haven, CT
- 149 *Breakdowns in conscious and unconscious control in opiate addiction*  
G. DiGirolamo<sup>1</sup>, N. Patel<sup>1</sup>, C. T. Hinchey<sup>2</sup>, G. Gonzalez<sup>1</sup>, <sup>1</sup>Psychology, College of the Holy Cross, Worcester, MA, <sup>2</sup>Psychiatry, University of Massachusetts, Medical School, Worcester, MA
- 150 *Impaired sleep functioning in prescription opioid-dependent individuals*  
E. E. Hartwell, S. E. Back, K. T. Brady, Psychiatry & Behavioral Sciences, MUSC, Charleston, SC
- 151 *Subjective sleep quality in opiate-dependent subjects in methadone and buprenorphine maintenance treatment*  
X. Balducci<sup>2,1</sup>, A. Mathillon<sup>1</sup>, C. Denis<sup>2,1</sup>, M. Fatseas<sup>1,2</sup>, V. Beltran<sup>1,3</sup>, J. Daulouede<sup>3,2,1</sup>, M. Auriacombe<sup>1,2,3</sup>, <sup>1</sup>Addiction Psychiatry (UMSR-CNRS), Universite Victor Segalen Bordeaux 2, Bordeaux, France, <sup>2</sup>Addiction Treatment Center, CHCP, CHU, Bordeaux, France, <sup>3</sup>Bizia Addiction Treatment Center, Bayonne, France
- 152 *Gender and race differences in pre-admission EKG findings at a methadone clinic*  
D. Antoine, E. Strain, A. Umbricht, Behavioral Pharmacological Research Unit, Johns Hopkins School of Medicine, Baltimore, MD
- 153 *Methadone dose and the QTc interval: Little clinical relevance big unknowns*  
G. Bart<sup>1</sup>, B. A. Bart<sup>1</sup>, R. Karim<sup>1</sup>, Z. Wyman<sup>2</sup>, <sup>1</sup>Medicine, Hennepin County Medical Center, Minneapolis, MN, <sup>2</sup>College of Pharmacy, University of Minnesota, Minneapolis, MN
- 154 *Risk of death during and after opiate substitution therapy in primary care*  
M. Hickman<sup>1</sup>, R. Cornish<sup>1</sup>, P. Vickerman<sup>1</sup>, J. Strang<sup>2</sup>, <sup>1</sup>School of Social and Community Medicine, University of Bristol, Bristol, United Kingdom, <sup>2</sup>National Addiction Centre, Institute of Psychiatry, London, United Kingdom
- 155 *Clinical correlates of spontaneous withdrawal from prescription opioids*  
S. Babalonis<sup>1</sup>, S. L. Walsh<sup>1,2,3</sup>, P. A. Nuzzo<sup>1</sup>, M. R. Lofwall<sup>1,2,3</sup>, <sup>1</sup>Behavioral Science, University of Kentucky (UK), Lexington, KY, <sup>2</sup>Center on Drug and Alcohol Research, UK, Lexington, KY, <sup>3</sup>Psychiatry, UK, Lexington, KY
- 156 *Positive affect in treatment onset can have negative impact on later outcomes after residential heroin detoxification program*  
H. Ekhtiari, P. Piray, Z. Alam-Mehrjerdi, B. Zamanian, P. Abharian, A. Mokri, Neurocognitive, Iranian National Center for Addiction Studies, Tehran, Islamic Republic of Iran
- 157 *Can we predict a patient's success with rapid naltrexone induction?*  
S. Mogali, N. Khan, M. Sullivan, E. Nunes, A. Bisaga, Substance Abuse, New York State Psychiatric Institute, New York, NY

- 158 *Final outcomes from an acceptance-based intervention to improve methadone detoxification success rates*  
A. Stotts<sup>1</sup>, C. Green<sup>1</sup>, T. Northrup<sup>1</sup>, J. Schmitz<sup>1</sup>, F. G. Moeller<sup>1</sup>, J. Grabowski<sup>2</sup>, <sup>1</sup>University of Texas Medical School at Houston, Houston, TX, <sup>2</sup>University of Minnesota, Minneapolis, MN
- 159 *A novel buprenorphine maintenance treatment program in a community-based recovery center in Baltimore City: Initial treatment outcomes*  
D. Agus<sup>3,1</sup>, A. M. Daniels<sup>1,3</sup>, E. Salisbury<sup>1,2</sup>, W. W. Davis<sup>1</sup>, S. Foerster<sup>2</sup>, J. Stafford<sup>2</sup>, A. Haskel<sup>2</sup>, M. Fingerhood<sup>2</sup>, <sup>1</sup>Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, <sup>2</sup>Johns Hopkins Medical Institutions, Baltimore, MD, <sup>3</sup>Behavioral Health Leadership Institute, Baltimore, MD
- 160 *Suicidality and continued opioid misuse in methadone patients: The role of mindfulness and experiential avoidance*  
K. Rosen<sup>1</sup>, A. Gutierrez<sup>1</sup>, K. Ramirez<sup>2</sup>, M. Scavone<sup>2</sup>, J. S. Potter<sup>1</sup>, <sup>1</sup>Psychiatry, UT Health Science Center, San Antonio, TX, <sup>2</sup>Center for Health Care Services, San Antonio, TX
- 161 *Determinants of health-related quality of life among methadone maintenance subjects in Taiwan*  
S. Wang<sup>1</sup>, L. Lin<sup>2</sup>, P. S. Lin<sup>1</sup>, L. W. Hung<sup>1</sup>, C. Y. Chen<sup>3</sup>, K. C. Tseng<sup>4</sup>, Y. L. Chien<sup>5</sup>, J. D. Wang<sup>6</sup>, I. K. Ho<sup>1</sup>, <sup>1</sup>Institute of Population Health Sciences, National Health Research Institutes, Miaoli County, Taiwan, <sup>2</sup>Department of Psychiatry, En Chu Kong Hospital, Taipei County, Taiwan, <sup>3</sup>Institute of Public Health, National Yang-Ming University, Taipei, Taiwan, <sup>4</sup>Department of Psychiatry, Taiwan Adventist Hospital, Taipei, Taiwan, <sup>5</sup>Department of Psychiatry, National Taiwan University Hospital, Taipei, Taiwan, <sup>6</sup>Department of Public Health, National Cheng-Kung University, Tainan, Taiwan
- 162 *The effectiveness of psychosocial intervention for heroin dependence in MMT in Shanghai*  
J. Du, M. Zhao, Shanghai Mental Health Center, Shanghai, China
- 163 *WITHDRAWN*
- 164 *12-Step group participation in opioid-dependent patients receiving buprenorphine and behavioral treatments*  
M. P. Hillhouse, J. Fahey, S. Reed, L. MacGraw, E. Nelson, B. Thornton, W. Ling, Integrated Substance Abuse Programs, University of California, Los Angeles, Los Angeles, CA
- 165 *Spiritual and religious beliefs and behaviors, self-help participation and opioid use*  
E. Nelson, M. Hillhouse, M. Smith, S. Reed, W. Ling, Integrated Substance Abuse Programs, University of California, Los Angeles, Los Angeles, CA

### INRC POSTERS

#### CHEMISTRY AND NOVEL LIGANDS

- 166 *Unexpected opioid activity profiles of analogs of the novel peptide kappa opioid receptor ligand CJ-15,208*  
J.V. Aldrich (1), S.S. Kulkarni (1), S.N. Senadheera (1), N.C. Ross (2), K.J. Reilley (2), S.O. Eans (2), M.L. Ganno (2), T.F. Murray (3), J.P. McLaughlin (2). (1) Dept. of Med. Chem., Univ. of Kansas, Lawrence, KS, (2) Torrey Pines Inst. for Molecular Studies, Port St. Lucie, FL, (3) Dept. of Pharmacol., Creighton Univ. Sch. of Med., Omaha, NE, USA
- 167 *Kinetics of fluorescent opioid ligand binding to the mu opioid receptor*  
W. Birdsong (1), S. Arttamangkul (1), K. Rice (2), J. Williams (1). (1) Vollum Institute, Oregon Health & Science Univ., Portland, OR, USA, (2) National Institute on Drug Abuse, Bethesda, MD, USA
- 168 *ALKS 33, a novel opioid receptor modulator, attenuates cocaine-induced increases in extracellular DA concentrations and cocaine self-administration in rats*  
J.I. Cunningham (1), M.S. Todtenkopf (1), R.L. Dean (1), M.R. Azar (2), G.Koob (3), D.R. Deaver (1), D.J. Eyerman (1). (1) Alkermes, Inc., Waltham, MA, (2) Behavioral Pharma, Inc., La Jolla, CA, (3) The Scripps Research Institute, La Jolla, CA, USA
- 169 *Oral activity of cyclic tetrapeptide JVA-2802: Short-acting KOR antagonism and prevention of stress-induced reinstatement of cocaine-CPP*  
S.O. Eans (1), M.L. Ganno (1), J.V. Aldrich (2), J.P. McLaughlin (1). (1) Torrey Pines Institute for Molecular Studies, Port St. Lucie, FL; (2) Dept. of Med. Chem., Univ. of Kansas, Lawrence, KS, USA
- 170 *Exploring bifunctional activity of 3-substituted piperidin-4-yl-1,3-dihydroindol-2-one class of NOP ligands at the mu-opioid receptor (MOP)*  
V. Journigan (1), W. Polgar (2), L. Toll (2), N. T. Zaveri (1). (1) Astraera Therapeutics, LLC, Mountain View, CA; (2) SRI International, Menlo Park, CA, USA
- 171 *Fluorescent opioid peptides from a cyclic peptide combinatorial library*  
Y. Li, M. Cazares, J. Thompson, J. Misler, R. Houghten, C. Dooley. Torrey Pines Institute for Molecular Studies, Port St. Lucie, FL, USA
- 172 *Endorphin peptide and glycopeptide analogues with helix address domains provide potent anti-nociception in mice*  
Y. Li (1), M. Lefever (1), D. Muthu (1), C.M. Kirkmire (2), D. Giuvelis (3), J.M. Bidlack (2), E.J. Bilsky (3), R. Polt (1). (1) Univ. Arizona, Tucson AZ, (2) Univ. of Rochester Medical Center, Rochester, NY, (3) Univ. of New England, Portland, ME, USA

- 173 *Kappa opioid tetrapeptides from expanded deconvolution of a positional scanning library*  
J. Misler, M. Cazares, T. LaVoi, T. Gibbins, A. Morales, L. Maida, M. Giulianotti, C. Dooley. Torrey Pines Institute for Molecular Studies, Port St. Lucie, FL, USA
- 174 *Oral availability of CJ-15,208, an opioid mixed agonist/antagonist analgesic with fewer liabilities in vivo*  
N.C. Ross (1), S. Kulkarni (2), J. V. Aldrich (2) J. P. McLaughlin (1). (1) TPIMS, Port St. Lucie, FL, (2) Dept. of Med. Chem., Univ. of Kansas, Lawrence, KS, USA
- 175 *Novel peptide and non-peptide opioid agonists lacking a positively charged nitrogen*  
P.W. Schiller, G. Weltrowska, I. Berezowska, T.M.-D. Nguyen, B.C. Wilkes, C. Lemieux, N.N. Chung. Lab. of Chemical Biology and Peptide Research, Clinical Research Institute of Montreal, Montreal, Que., Canada
- 176 *Lead optimization studies of N-(2-[1,1'-biphenyl]-4-ylethyl)-8-CAC*  
M.A. VanAlstine (1), M.P. Wentland (1), D.J. Cohen (2), J.M. Bidlack (2). (1) Dept. of Chemistry and Chemical Biology, Rensselaer Polytechnic Institute, Troy, NY, (2) Dept. of Pharmacology and Physiology, University of Rochester, Rochester, NY, USA
- 177 *Novel analogs of endomorphins provide antinociception without spatial and recognition memory deficits produced by morphine*  
J.N. Jernberg (1), X. Zhang (2), J.E. Zadina (1,2,3,4). (1) Graduate Neuroscience Program, Dept. of (2) Medicine & (3) Pharmacology, Tulane Univ. Sch. of Med., (4) SE LA Veterans HCS, New Orleans, LA, USA

### PEPTIDE REGULATION

- 178 *Prodynorphin gene expression in rats treated with ethanol and growth hormone*  
A. Grönbladh, J. Johansson, E. Enhamre, B-M. Johansson, M. Hallberg, F. Nyberg. Div. of Biological Research on Drug Dependence, Dept. of Pharmaceutical Biosciences, Uppsala Univ., Uppsala, Sweden
- 179 *Effects on proopiomelanocortin (POMC) expression and conditioned place aversion during protracted spontaneous withdrawal from chronic intermittent escalating-dose heroin in POMC-EGFP promoter transgenic mice*  
K. Niikura, Y. Zhou, A. Ho, M. J. Kreek. Lab. of Biology of Addictive Diseases, Rockefeller Univ., New York, NY, USA
- 180 *Differences in opioid peptide levels in Wistar rats from five different suppliers*  
S. Palm, E. Roman, I. Nylander. Dept. Pharmaceutical Biosciences, Uppsala University, Uppsala, Sweden

- 181 *Pathogenic activities of dynorphin A mutants that cause human neurodegenerative disorder spinocerebellar ataxia type 23: Induction of nociceptive behaviors in mice through non-opioid mechanism*  
H. Watanabe (1), D.S. Verbeek (2), H. Mizoguchi (3), F. Nyberg (1), O. Krishtal (4), S. Sakurada (3), G. Bakalkin (1). (1) Dept. Pharmaceut. Biosci., Uppsala Univ., Sweden, (2) Dept. Genet., Univ. Groningen, The Netherlands, (3) Dept. Physiol. and Anat., Tohoku Pharmaceut. Univ., Sendai, Japan, (4) Inst. Physiology, Kiev, Ukraine
- 182 *The effect of mastitis and milk congestion on the levels of beta-casomorphin-8 in milk and plasma samples from puerperal women*  
A. Carlsson (1), L. Righard (2), F. Nyberg (1). (1) Dept. of Pharmaceutical Biosciences, Uppsala Univ., Uppsala, (2) Dept. of Pediatrics, Univ. Hospital, Malmö, Lund University, Lund, Sweden
- 183 *Microdialysis-mass spectrometry quantification of vasopressin in the hypothalamus and amygdala of freely moving rats*  
B. Reed (1,2), B.T. Chait (2), M.J. Kreek (1). (1) Lab. of Biology of Addictive Diseases, (2) Lab. of Mass Spectrometry and Gaseous Ion Chemistry, Rockefeller Univ., New York, NY, USA
- 184 *Regional mRNA expression of the endogenous opioid and dopaminergic systems in brains of C57BL/6J and 129P3/J mice: Strain and heroin effects*  
S.D. Schlussman, J. Cassin, Y. Zhang, O. Levran, A. Ho, M.J. Kreek. Lab. of Biology of Addictive Diseases, Rockefeller Univ., New York, NY, USA
- 185 *Dynorphin gene expression in the amygdala after stress exposure*  
J.T. Silveira, S. Gouty, G. Bull, B.M. Cox. Dept. of Pharmacology, Uniformed Services Univ., Bethesda MD, USA
- 186 *Regulation of prodynorphin expression in human brain: Transcription factors targeting SNPS associated with alcohol dependence*  
M.M. Taqi, I. Bazov, H. Watanabe, T. Yakovleva, G. Bakalkin. Dept. Pharmaceut. Biosci., Uppsala Univ., Sweden
- 187 *Dynorphin mutations cause human neurodegenerative disorder spinocerebellar ataxia type 23*  
D.S. Verbeek (1), H. Watanabe (2), J. Jezierska (1), K.A. Artemenko (2), T. Yakovleva (2), K. F. Hauser (3), G. Bakalkin (2). (1) Dept. Genetics, Univ. Groningen, Netherlands, (2) Dept. Pharmaceut. Biosci., Uppsala Univ., Sweden, (3) Dept. Pharm. Toxicol., Virginia Commonwealth Univ., Richmond, VA, USA
- 188 *Duration of withdrawal from chronic escalating-dose binge cocaine: Effects on cocaine-induced conditioned place preference and expression of selective components of the opioid system*  
Y. Zhang, S.D. Schlussman, E.R. Butelman, A. Ho, M.J. Kreek. Lab. of Biology of Addictive Diseases, Rockefeller Univ., New York, NY, USA



- 189 *Chronic voluntary alcohol drinking enhances proopiomelanocortin (POMC) gene expression in nucleus accumbens and hypothalamus of alcohol-preferring rats*  
Y. Zhou (1), G. Columbo (2), K. Niikura (1), M.A.M. Carai (2), A. Ho (1), G.L. Gessa (2), M.J. Kreek (1). (1) Lab of Biology of Addictive Diseases, Rockefeller Univ., New York, USA, (2) CNR Neuroscience Institute, Monserrato, Italy
- 190 *Streptozotocin-induced type 1 diabetes impairs learning abilities in Barnes Maze and alters growth hormone receptor but not prodynorphin mRNA expression in the prefrontal cortex of male mice*  
E. Enhamre, A. Carlsson, A. Grönbladh, H. Watanabe, B.-M. Johansson, M. Hallberg, F. Nyberg. Dept. of Pharmaceutical Biosciences, Division of Biological Research on Drug Dependence, Uppsala Univ., Uppsala, Sweden
- TOLERANCE, DEPENDENCE, WITHDRAWAL
- 191 *L-Theanine suppresses abstinence signs in morphine-dependent rhesus monkeys and has anxiolytic-like activity in the mouse elevated plus maze*  
M.D. Aceto, L.S. Harris, L.D. Hughes, I.D. Premaratne, L.E. Wise, A.H. Lichtman. Dept. of Pharmacology, School of Medicine, Virginia Commonwealth Univ., Richmond, VA, USA
- 192 *Down-regulation of beta-arrestin2 contributes to morphine tolerance in the gastrointestinal tract*  
H. I. Akbarali, M. Kang, H. Maguma, T.H. Smith, G.R. Ross, W.L. Dewey. Dept. of Pharmacology and Toxicology, Virginia Commonwealth Univ., Richmond, VA, USA
- 193 *Acute tolerance to etorphine and morphine dependence in MOPr phosphorylation-deficient mice*  
E. Barbier, J.B. Wang. Dept. of Pharmaceutical Sciences, Univ. of Maryland Sch. of Pharmacy, Baltimore, MD, USA
- 194 *Analgesic tolerance to high efficacy agonists but not to morphine is reversed in phosphorylation-deficient S375A mu-opioid receptor knockin mice*  
G. Grecksch (1), A.-K. Imhof (2), C. Pierstorff (1), S. Just (2), C. Doll (2), A. Lupp (2), A. Becker (1), T. Koch (1), R. Stumm (2), V. Höllt (1), S. Schulz (2). (1) Institute of Pharmacology and Toxicology, University Hospital, Otto-von-Guericke-Univ. Magdeburg, (2) Institute of Pharmacology and Toxicology, University Hospital, Friedrich Schiller Univ., Jena, Germany
- 195 *Morphine tolerance, desensitization and recovery in locus coeruleus neurons from morphine-treated rats*  
E. Levitt, J. Williams. Vollum Institute, Oregon Health and Science Univ., Portland, OR, USA

- 196 *Differential role for beta-arrestin2 in the development of antinociceptive tolerance and physical dependence in response to distinct opioid analgesics*  
K. M. Raehal, L.M. Bohn. Dept. of Molecular Therapeutics and Neuroscience, Scripps Research Institute, Jupiter, FL, USA

### ADDICTION

- 197 *Clinically insignificant QTc changes among former opiate addicts during first years of Methadone Maintenance Treatment*  
E. Peles (1), S. Linzy (2) M.J. Kreek (3), M. Adelson (1,2,3). (1) Dr. Miriam and Sheldon G. Adelson Clinics for Drug Abuse Treatment and Research, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel, (2) Las Vegas, NV, USA, (3) Rockefeller Univ., New York, NY, USA
- 198 *Buprenorphine/naltrexone by iontophoresis: A transdermal approach to drug abuse treatment*  
A. Taverner, S. Cordery, R.H. Guy, M.B. Delgado-Charro, C.P. Bailey, S.M. Husbards. Dept. of Pharmacy and Pharmacology, Univ. of Bath, Bath, UK
- 199 *Non-medical use of prescription narcotics in the sequence of adolescent drug-use initiation and epidemiology of narcotic use by Indiana adolescents*  
A. YoussefAgha, W. Jayawardene, M. Torabi. Dept. of Applied Health Science, Indiana Univ., Bloomington, IN, USA
- 200 *Hypothalamic KOP-r and MOP-r expression in Fischer and Lewis rats after dose escalation preference paradigm of heroin self-administration*  
R. Picetti, A. Ho, M.J. Kreek. Rockefeller University, New York, NY, USA

### OPIOIDS AND IMMUNE FUNCTION

- 201 *Opioid and alcohol pharmacodynamics: Contributions of innate immune signaling to drug response*  
M.R. Hutchinson (1,2), Y. Wu (2), E.J. Jaehne (2), L. Liu (2), K.R. Diener (3), J.D. Hayball (3), K.C. Rice (4), L.R. Watkins (5), A.A. Somogyi (2). (1) Physiology, Univ of Adelaide, Adelaide, (2) Pharmacology, Univ of Adelaide, Adelaide, (3) School of Pharmacy & Medical Sciences, Univ of SA, Adelaide, Australia; (4) Chem Bio Res Branch, NIDA & NIAAA, Rockville, MD, (5) Dept Psychology & the Center Neuroscience, Univ Colorado at Boulder, Boulder, CO, USA
- 202 *Regulation of Tat-mediated neurotoxicity and glial inflammatory signaling by CCR5 and the mu-opioid receptor*  
E.M. Podhaizer (1), Y. Zhang (2), T.E. Prisinzano (3), P.E. Knapp (1,4), K.F. Hauser (1). Depts. of (1) Pharmacol. & Toxicol., (2) Med. Chem., (4) Anat. & Neurobiol., Virginia Commonwealth Univ., Richmond, VA, (3) Dept. of Med. Chem., Univ. of Kansas, Lawrence, KS, USA

- 203 *Variants of mu opioid receptor influence HIV viral load change in individuals before initiating HAART*  
D. Proudnikov (1), M. Randesi (1), M. Dorn (2), V. Yuferov (1), H. Crystal (3), A. Ho (1), J. Ott (4, 2), M.J. Kreek (1). (1) Lab. of Biol. of Addict. Diseases, The Rockefeller Univ., New York, NY, USA, (2) Institute of Psychology CAS, Beijing, China, (3) Dept. of Pathol., SUNY Downst. Med. Center, Brooklyn, NY, (4) Lab. of Statist. Genet., Rockefeller Univ., New York, NY, USA
- 204 *Variants of kappa opioid receptor influence viral load of HIV- positive females on HAART*  
M. Randesi (1), D. Proudnikov (1), M. Dorn (2), V. Yuferov (1), H. Crystal (3), A. Ho (1), J. Ott (4,2), M.J. Kreek (1). (1) Lab. of Biology of Addictive Diseases, Rockefeller Univ., New York, NY, USA, (2) Institute of Psychology, CAS, Beijing, China, (3) Dept. of Pathol., SUNY Downstate Medical Center, Brooklyn, NY, (4) Lab. of Statistical Genetics, Rockefeller Univ., New York, NY, USA
- 205 *Opioid and gp120 interactive neuropathogenesis in HIV-1*  
K.L. Samano (1), P.E. Knapp (2), K.F. Hauser (1). (1) Depts. of Pharmacology and Toxicology, (2) Anatomy and Neurobiology, Virginia Commonwealth Univ., Richmond, VA, USA
- 206 *Expression of OPRK1, PDYN and CXCR4 in the caudate in postmortem brain of HIV-infected and HIV-negative subjects*  
V. Yuferov (1), A. Ho (1), S. Morgello (2), M.J. Kreek (1). (1) Lab. of Addictive Diseases, Rockefeller Univ., (2) Pathology, Mount Sinai Medical Center, New York, NY, USA
- 207 *Chronic morphine tolerance upregulated spinal proinflammatory cytokines which are revised by HSV vector expressing interleukin 4 in rats*  
X. Zheng (1,2), J. Sun (1), S. Liu (1,2), M. Mata (1), D. Fink (1), S. Hao (1,2). (1) Dept. of Neurology, Univ. Michigan, Ann Arbor, MI, (2) Dept. of Anesthesiology, Univ. Miami Miller Medical School, Miami, FL, USA

### OPIOID RECEPTOR PHYSIOLOGY

- 208 *Opioid-sensitive GABA inputs from RMT $\gamma$  neurons synapse on midbrain dopamine neurons*  
A. Matsui, J. T. Williams. Vollum Institute, Oregon Health and Science Univ., Portland, OR, USA
- 209 *(+)-5a Compound, but not nociceptin, excited projection neurons in rat periaqueductal gray slices*  
L.-W. Tung (1), L.-C. Chiou (1, 2). (1) Grad. Inst. and (2) Dept. Pharmacology, Coll. Medicine, National Taiwan Univ., Taiwan

### RECEPTOR PHOSPHORYLATION, DESENSITIZATION, TRAFFICKING AND DOWNREGULATION

- 210 *Differential desensitization of pre- and postsynaptic mu opioid receptors regulating POMC neurons*  
R.L. Pennock, S.T. Hentges. Dept. of Biomedical Sciences, Colorado State University, Fort Collins, CO, USA
- 211 *Prolonged stimulation of  $\mu$ -opioid receptors in locus coeruleus neurons induces  $\beta$ -arrestin-2-dependent heterologous desensitization of  $\alpha_2$ -adrenoceptors*  
M.J. Christie (1), B. Chieng (1), V.C. Dang (2). (1) Brain & Mind Research Inst., U. Sydney, Sydney, Australia. (2) Dept Psychiat, UCSF, San Francisco, CA, USA
- 212 *Agonist-selective patterns of mu-opioid receptor phosphorylation revealed by phosphosite-specific antibodies*  
C. Doll (1), J. Konietzko (2), F. Pöll (1), T. Koch (2), V. Höllt (2), S. Schulz (1). (1) Institute of Pharmacology and Toxicology, Univ. Hospital, Friedrich Schiller Univ. Jena, (2) Institute of Pharmacology and Toxicology, Univ. Hospital, Otto-von-Guericke-Univ., Magdeburg, Germany
- 213 *Interactions of gonadal steroids and acute stress on levels of phosphorylated mu opioid receptors in the rat hippocampus*  
K.L. Gonzales (1), J.D. Chapleau (1), D. Kelter (1), J.P. Pierce (1), T.J. Williams (1), A. Torres-Reveron (1,3), B.S. McEwen (2), E.M. Waters (2), T.A. Milner (1). (1) Dept. of Neurology/Neurosci. Weill Cornell Medical Col., (2) Lab of Neuroendocrin., Rockefeller Univ., New York, NY, USA, (3) Col. of Pharm., Nova Southeastern University, Ponce, Puerto Rico
- 214 *Mu-opioid receptor desensitization in the ventral tegmental area*  
J. D. Lowe, C. P. Bailey. Univ. of Bath, Dept. of Pharmacy & Pharmacology, Bath, UK
- 215 *Morphine-induced mu-opioid receptor mediated desensitization of GIRK conductance in locus coeruleus neurons of RMOR mice*  
A. Madhavan, J.L. Whistler. Ernest Gallo Clinic and Research Center, UCSF, Emeryville, CA, USA.
- 216 *Mu and delta opioid receptor heteromerization: The importance of being trafficked*  
L. Milan-Lobo, J. Enquist, J.L. Whistler. Ernest Gallo Clinic and Research Center, Dept. of Neurology, Univ. of California San Francisco, Emeryville, CA, USA
- 217 *Correlating MOR ligand induced receptor internalization with acute antinociceptive tolerance*  
C. Dooley, J. Misler, L. Li, K. Reilly, S. Eans, J. McLaughlin. Torrey Pines Institute for Molecular Studies, Port St. Lucie, FL, USA

*BADGES MUST BE WORN FOR ALL SESSIONS AND SOCIAL EVENTS*

## **INRC/CPDD Symposium 2**

**Regency 1  
2:00 - 4:00 PM**

### **HUMAN BRAIN IMAGING OF OPIOID RECEPTORS**

Chairs: Woody Lin and Steve Grant

- 2:00 *Imaging opioid effects on brain systems*  
Lino Becerra, McLean Hospital, USA
- 2:30 *Mu-opioid receptors and cocaine addiction*  
David Gorelick, NIDA IRP, USA
- 3:00 *Development and clinical use of a PET radioligand for the kappa receptor*  
Diana Martinez, Columbia University, USA
- 3:30 *Endogenous opioid system modulation of motivation circuitry*  
Jon-Kar Zubieta, University of Michigan, USA

## **Oral Communications 14**

**Regency 3  
2:00 - 4:00 PM**

### **HIGH TECH TREATMENT**

Chairs: Alan J. Budney and Steven J. Ondersma

- 2:00 *Telemedicine-based therapy for rural offenders with a history of hazardous drinking*  
M. Staton-Tindall, C. Leukefeld, M. Webster, R. Freeman, University of Kentucky, Lexington, KY
- 2:15 *Computer-assisted delivery of behavioral treatment for cannabis use disorders: Preliminary results from a controlled trial and implications for dissemination*  
A. J. Budney<sup>1</sup>, C. Stanger<sup>1</sup>, P. Costello<sup>1</sup>, S. Fearer<sup>1</sup>, D. D. Walker<sup>2</sup>, W. K. Bickel<sup>1</sup>, <sup>1</sup>University of Arkansas for Medical Sciences, Little Rock, AR, <sup>2</sup>University of Washington, Seattle, WA
- 2:30 *Computer-delivered psychosocial treatment for offenders with substance use disorders*  
S. Sacks<sup>1</sup>, L. Marsch<sup>2</sup>, M. Chaple<sup>1</sup>, <sup>1</sup>Center for the Integration of Research & Practice, National Development & Research Institutes, New York, NY, <sup>2</sup>Center for Technology & Health, National Development & Research Institutes, New York, NY
- 2:45 *A randomized clinical trial of a computer-delivered brief intervention for post-partum drug, alcohol, and tobacco use: Three-month outcomes*  
S. J. Ondersma<sup>1</sup>, D. S. Svikis<sup>2</sup>, J. R. Beatty<sup>1</sup>, N. Lockhart<sup>1</sup>, <sup>1</sup>Wayne State University, Detroit, MI, <sup>2</sup>Virginia Commonwealth University, Richmond, VA
- 3:00 *Impulsivity, biofeedback, and substance abuse treatment*  
D. C. Lott<sup>1,2</sup>, A. Yang<sup>3</sup>, <sup>1</sup>Linden Oaks Hospital, Naperville, IL, <sup>2</sup>Psychiatry, University of Illinois at Chicago, Chicago, IL, <sup>3</sup>Psychiatry and Behavioral Neuroscience, University of Chicago, Chicago, IL
- 3:15 *Is virtual reality the best approach for cue exposure treatment?*  
O. García-Rodríguez<sup>1</sup>, I. Pericot-Valverde<sup>2</sup>, M. Ferrer-García<sup>2</sup>, R. Secades-Villa<sup>1</sup>, J. Gutiérrez-Maldonado<sup>2</sup>, <sup>1</sup>Psychology, University of Oviedo, Oviedo, Spain, <sup>2</sup>Personality, assessment and psychological treatments, University of Barcelona, Barcelona, Spain
- 3:30 *Ecological Momentary Assessment of self-identified reasons for specific instances of drug use among participants with and without hepatitis C*  
K. A. Phillips, D. H. Epstein, K. L. Preston, National Institute on Drug Abuse, Intramural Research Program, Baltimore, MD

- 3:45 *Practicing relapse prevention in artificial reality environments: Using computer simulations as an adjunct for treatment in veterans with alcohol use disorder*

M. Verduin<sup>1</sup>, S. LaRowe<sup>2,3</sup>, R. Joyce<sup>1</sup>, H. Myrick<sup>2,3</sup>, C. Bowers<sup>1</sup>, J. Cannon-Bowers<sup>1</sup>,  
<sup>1</sup>University of Central Florida, Orlando, FL, <sup>2</sup>Charleston VAMC, Charleston, SC, <sup>3</sup>Medical University of South Carolina, Charleston, SC

## Oral Communications 15

**Diplomat 1-2**  
**2:00 - 4:00 PM**

### RAVE REVIEWS: CLUB DRUGS AND HALLUCINOGENS

Chairs: Roland R. Griffiths and Jillian H. Broadbear

- 2:00 *In vivo neurochemistry of designer methcathinone analogs abused by humans*  
M. H. Baumann<sup>1</sup>, M. A. Ayestas<sup>1</sup>, R. B. Rothman<sup>1</sup>, N. V. Cozzi<sup>2</sup>, <sup>1</sup>Translational Pharmacology Sect., IRP, NIDA, NIH, Baltimore, MD, <sup>2</sup>Dept. of Pharmacology, University of Wisconsin School of Med. & Public Health, Madison, WI
- 2:15 *Effect of rat strain and ambient temperature on the hypothermic and locomotor stimulant properties of 4-methylmethcathinone*  
M. Wright<sup>1</sup>, D. Angrish<sup>2</sup>, S. Aarde<sup>1</sup>, K. Creehan<sup>1</sup>, T. J. Dickerson<sup>2</sup>, M. A. Taffe<sup>1</sup>, <sup>1</sup>CNAD, The Scripps Research Institute, La Jolla, CA, <sup>2</sup>Department of Chemistry, The Scripps Research Institute, La Jolla, CA
- 2:30 *How does exposure to a 'binge' dose of MDMA affect behavior of rats trained in a three-way drug discrimination?*  
J. H. Broadbear, V. Smithies, School of Psychology and Psychiatry, Monash University, Clayton, VIC, Australia
- 2:45 *Human psychopharmacology and dose-effects of salvinorin A, a kappa-opioid agonist hallucinogen present in the plant Salvia divinorum*  
M. W. Johnson<sup>1</sup>, K. A. MacLean<sup>1</sup>, C. R. Reissig<sup>1</sup>, T. E. Prisinzano<sup>2</sup>, R. R. Griffiths<sup>1</sup>, <sup>1</sup>Johns Hopkins University School of Medicine, Baltimore, MD, <sup>2</sup>The University of Kansas, Lawrence, KS
- 3:00 *Piperazine containing party pills—effect of an acute dose of trifluoromethylphenylpiperazine on executive functioning using the Stroop paradigm*  
L. E. Curley<sup>1,2</sup>, R. R. Kydd<sup>3,2</sup>, I. J. Kirk<sup>4,2</sup>, B. R. Russell<sup>1,2</sup>, <sup>1</sup>School of Pharmacy, The University of Auckland, Auckland, New Zealand, <sup>2</sup>Centre for Brain Research, The University of Auckland, Auckland, New Zealand, <sup>3</sup>Department of Psychological Medicine, The University of Auckland, Auckland, New Zealand, <sup>4</sup>Department of Psychology, The University of Auckland, Auckland, New Zealand
- 3:15 *Mephedrone, patterns of use, effects, risk profile and abuse liability*  
A. R. Winstock<sup>1</sup>, J. Marsden<sup>2</sup>, L. Mitcheson<sup>1</sup>, <sup>1</sup>Addiction, South London and Maudsley NHS Trust and KCL, London, United Kingdom, <sup>2</sup>National Addiction Centre, Kings College London, London, United Kingdom
- 3:30 *Pharmacokinetics of oral 3,4-methylenedioxymphetamine in humans*  
M. J. Baggott<sup>1</sup>, L. Li<sup>1</sup>, G. P. Galloway<sup>1</sup>, M. A. Huestis<sup>2</sup>, K. Scheidweiler<sup>2</sup>, A. Barnes<sup>2</sup>, J. Mendelson<sup>1</sup>, <sup>1</sup>Addiction Pharmacology, California Pacific Medical Center Research Institute, San Francisco, CA, <sup>2</sup>Chemistry and Drug Metabolism, Intramural Research Program, NIDA, Baltimore, MD

- 3:45 *Psilocybin dose-effects: Ascending dose sequence associated with greater persisting positive effects at higher doses*

R. R. Griffiths, M. W. Johnson, Psychiatry and Neuroscience, Johns Hopkins University  
School of Medicine, Baltimore, MD

### Symposium IX

**Diplomat 4-5**  
**2:00 - 4:00 PM**

#### NUTRITION AND ADDICTION: FOOD FOR THOUGHT

Chairs: Rao Rapaka and David Shurtleff

- 2:00 *Dopamine receptors in addiction-like reward dysfunction and compulsive eating in obese rats*  
Paul Kenny, Laboratory of Behavioral and Molecular Neuroscience, The Scripps Research  
Institute, Jupiter, FL
- 2:30 *Iron and the dopaminergic system*  
James R. Connor, College of Medicine, Penn State Milton S. Hershey Medical Center,  
Hershey, PA
- 3:00 *Neurochemistry of drug action: Insights from proton magnetic resonance spectroscopic imaging and their relevance to addiction*  
Perry Renshaw, Brain Institute of the University of Utah, Salt Lake City, UT
- 3:30 *Parameters regarding neuropsychiatric nutritional requirements for intake of omega-3 highly unsaturated fatty acids*  
Joseph Hibbeln, LMBB, National Institutes Alcohol Abuse and Alcoholism, NIH,  
Bethesda, MD

### INRC/CPDD Symposium 3

**Regency 1**  
**4:15 - 6:15 PM**

#### NEW PERSPECTIVES ON BUPRENORPHINE

Chairs: Sandra D. Comer and John Traynor

- 4:15 *The unique pharmacology of buprenorphine*  
John Traynor, University of Michigan, USA
- 4:45 *New ligands from an old friend*  
Stephen Husbands, Bath, United Kingdom
- 5:15 *Buprenorphine: A novel receptor target and mechanism of action*  
Gavril Pasternak, Memorial Sloan Kettering Cancer Center, USA
- 5:45 *Abuse liability of buprenorphine in humans under various states of opioid physical dependence*  
Sandra Comer, Columbia University, USA

### Oral Communications 16

**Regency 3**  
**4:15 - 6:15 PM**

#### CRAVING ATTENTION: MALES VS. FEMALES

Chairs: Wendy J. Lynch and Carmela M. Reichel

- 4:15 *Sex differences in cocaine reinforcement and reinstatement vary with stage of addiction*  
S. E. Doyle, C. Ramoa, W. J. Lynch, Psychiatry & Neurobehavioral Sciences, University of  
Virginia, Charlottesville, VA

- 4:30 *Sex differences in orexin mediation of locomotion and cocaine-seeking in rats*  
L. Zhou, R. E. See, Neurosciences, Medical University of South Carolina, Charleston, SC
- 4:45 *Methamphetamine self-administration in female rats*  
C. M. Reichel, M. Van Roijen, S. M. Ghee, C. Chan, R. E. See, Neurosciences, Medical University of South Carolina, Charleston, SC
- 5:00 *Sex differences in brain activity following corticotropin-releasing hormone in cocaine-dependent men and women*  
M. Moran-Santa Maria<sup>1</sup>, K. Johnson<sup>2</sup>, C. Reed<sup>1</sup>, C. McWhite<sup>1</sup>, K. Brady<sup>1</sup>, <sup>1</sup>Psychiatry and Behavioral Neurosciences, Medical University of South Carolina, Charleston, SC, <sup>2</sup>Department of Anesthesia, Stanford University, Stanford, CA
- 5:15 *Gender differences in neural activity during drug craving and gambling urges: An fMRI study*  
H. Kober<sup>1</sup>, C. Lacadie<sup>2</sup>, M. N. Potenza<sup>1,3</sup>, <sup>1</sup>Psychiatry, Yale University, New Haven, CT, <sup>2</sup>Diagnostic Radiology, Yale University, New Haven, CT, <sup>3</sup>Neurobiology, Yale University, New Haven, CT
- 5:30 *The role of dopamine vs. glutamate signaling in the nucleus accumbens on motivation for cocaine: Effects of sex and stage of addiction*  
W. J. Lynch, S. E. Doyle, C. King, C. Ramoa, University of Virginia, Charlottesville, VA
- 5:45 *Menstrual phase differences in subjective-effects of nicotine response*  
A. Allen, M. al'Absi, D. K. Hatsukami, S. S. Allen, Family Medicine & Community Health, University of Minnesota, Minneapolis, MN
- 6:00 *Reinstatement of methamphetamine seeking in male and female rats treated with modafinil and allopregnanolone*  
N. Holtz<sup>1</sup>, M. Carroll<sup>1</sup>, A. Lozama<sup>2</sup>, T. Prisinzano<sup>2</sup>, <sup>1</sup>Psychiatry, University of Minnesota, Minneapolis, MN, <sup>2</sup>Medicinal Chemistry, University of Kansas, Lawrence, KS

## Symposium X

**Diplomat 1-2**  
**4:15 - 6:15 PM**

### CPDD INTERNATIONAL COMMITTEE SYMPOSIUM VOLATILE SUBSTANCE MISUSE: A GLOBAL CALL FOR ACTION

Chairs: Flavio Pechansky and Colleen A. Dell

- 4:15 *Phenomenology, natural history and sociocultural aspects of inhalant use and intoxication*  
Matthew O. Howard, University of North Carolina School of Social Work, Chapel Hill, NC
- 4:45 *Achievements and challenges in understanding the neuropharmacology of inhalant misuse*  
Silvia Cruz<sup>1</sup>, Scott Bowen<sup>2</sup>, <sup>1</sup>Cinvestav, Granjas Coapa, Mexico, <sup>2</sup>Wayne State University, Detroit, MI
- 5:15 *Therapeutic interventions for volatile substance misuse*  
Sarah MacLean, Turning Point Alcohol and Drug Centre, University of Melbourne, Fitzroy, VIC, Australia
- 5:45 *Discussant*  
Robert Balster, Institute for Drug and Alcohol Studies, Virginia Commonwealth University, Richmond, VA



## Oral Communications 17

**Diplomat 4-5**  
**4:15 - 6:15 PM**

### TEEN SCENE: ADOLESCENT DRUG ABUSE

Chairs: C. Debra M. Furr-Holden and Lisa A. Marsch

- 4:15 *Risk-taking: Influence of tobacco use and peers*  
E. Cavalca<sup>1</sup>, T. Liss<sup>1</sup>, C. Lejuez<sup>2</sup>, E. Reynolds<sup>2</sup>, C. DeLottinville<sup>1</sup>, G. Kong<sup>1</sup>, S. Krishnan-Sarin<sup>1</sup>, <sup>1</sup>Yale University School of Medicine, New Haven, CT, <sup>2</sup>Psychology, University of Maryland, Baltimore, MD
- 4:30 *Comparison of DSM-IV and proposed DSM-5 substance use disorder criteria in US adolescents*  
B. G. Case<sup>1,2,3</sup>, J. He<sup>3</sup>, K. R. Merikangas<sup>3</sup>, <sup>1</sup>Statistics and Services Research, Nathan Kline Institute, Orangeburg, NY, <sup>2</sup>Child and Adolescent Psychiatry, New York University School of Medicine, New York, NY, <sup>3</sup>Developmental Genetic Epidemiology, National Institute of Mental Health, Bethesda, MD
- 4:45 *Characteristics associated with diversion of scheduled prescription medications among young adolescents*  
S. E. McCabe, B. T. West, C. J. Teter, J. A. Cranford, P. Ross-Durow, A. M. Young, C. J. Boyd, Institute for Research on Women and Gender, University of Michigan, Ann Arbor, MI
- 5:00 *Are adolescent addictive behaviors associated with adolescent pregnancy?*  
G. P. Lee<sup>1</sup>, C. L. Storr<sup>2,1</sup>, N. S. Ialongo<sup>1</sup>, S. S. Martins<sup>1</sup>, <sup>1</sup>Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, <sup>2</sup>University of Maryland, Baltimore, MD
- 5:15 *The growth of neighborhood disorder and marijuana use among urban adolescents transitioning into young adulthood: Making a case for policy and environmental interventions*  
C. M. Furr-Holden<sup>1</sup>, M. H. Lee<sup>1</sup>, A. J. Milam<sup>1</sup>, R. M. Johnson<sup>2</sup>, N. S. Ialongo<sup>1</sup>, <sup>1</sup>Mental Health, Johns Hopkins University, Baltimore, MD, <sup>2</sup>Community Health Sciences, Boston University, Boston, MA
- 5:30 *A randomized, controlled trial of buprenorphine dosing regimens for opioid-dependent youth*  
L. A. Marsch<sup>1</sup>, S. Moore<sup>1</sup>, R. Solhkhah<sup>2</sup>, <sup>1</sup>Center for Technology and Health, National Development and Research Institutes, New York, NY, <sup>2</sup>Maimonides Medical Center, New York, NY
- 5:45 *Sequenced vs. integrated treatment for co-occurring depression and substance use disorders in adolescents*  
H. B. Waldron, P. Rhode, C. W. Turner, J. L. Brody, J. Jorgensen, Oregon Research Institute, Eugene, OR
- 6:00 *The relative risks of osmotic-release methylphenidate treatment for adolescent substance abusers*  
T. Winhusen<sup>1</sup>, D. Lewis<sup>1</sup>, P. Riggs<sup>2</sup>, R. Davies<sup>2</sup>, L. Adler<sup>3</sup>, S. Sonne<sup>4</sup>, E. Somoza<sup>1</sup>, <sup>1</sup>University of Cincinnati, Cincinnati, OH, <sup>2</sup>University of Colorado, Denver, CO, <sup>3</sup>VA NY Harbor Healthcare System, New York, NY, <sup>4</sup>University of South Carolina, Charleston, SC

*BADGES MUST BE WORN FOR ALL SESSIONS AND SOCIAL EVENTS*

## **Workshop IX**

**Regency 1  
8:00 - 10:00 PM**

### **GETTING SMART ABOUT DEVELOPING INDIVIDUALIZED SEQUENCES OF HEALTH INTERVENTIONS**

Chairs: Susan A. Murphy and Daniel Almirall

*Developing dynamic, sequential treatments that optimize substance use outcomes: SMART experimental design principles*

Daniel Almirall, Institute for Social Research, University of Michigan, Ann Arbor, MI

*Using SMART design technology to develop an adaptive reinforcement-based treatment strategy for pregnant drug abusers*

Hendree Jones, Substance Abuse Treatment Evaluations and Interventions Program, RTI International, Research Triangle Park, NC

*Adaptive approach to naltrexone treatment for alcoholism*

David W. Oslin<sup>1</sup>, Kevin G. Lynch<sup>2</sup>, <sup>1</sup>Philadelphia Veterans Affairs Medical Center and <sup>2</sup>Psychiatry, University of Pennsylvania Medical Center, Philadelphia, PA

## **Workshop X**

**Regency 3  
8:00 - 10:00 PM**

### **NIDA RESEARCH RESOURCES – AN UPDATE ON THE NIDA DRUG SUPPLY AND ANALYTICAL SERVICES PROGRAM**

Chairs: Hari H. Singh and Rao Rapaka

*An update on NIDA drug supply program*

F. Ivy Carroll, RTI International, Research Triangle Park, NC

*Procedure for acquisition of inventoried drugs and other chemical substances, their storage and distribution under controlled environment*

Kenneth H. Davis, Jr., RTI International, Research Triangle Park, NC

*Procedures for analysis of drugs of abuse in experimental biological samples*

David E. Moody, University of Utah, Lake City, UT

*Procedure for X-Ray crystallography of chemical compounds and biological substances*

Jeffrey R. Deschamps, Laboratory of Structural Biology, Naval Research Laboratory, U.S. Department of Navy, Washington, DC

## **Workshop XI**

**Diplomat 5  
8:00 - 10:00 PM**

### **WHAT'S NEW AT NIDA AND NIH: PEER REVIEW AND OTHER POLICIES THAT AFFECT APPLICANTS**

Chairs: Meena Hiremath, Teri Levitin and Mark Swieter

## **Workshop XII**

**Diplomat 4  
8:00 - 10:00 PM**

### **A SYSTEMATIC APPROACH TO SELECTION AND MEASUREMENT IN CLINICAL TRIALS RESEARCH**

*Considerations in defining a drug use primary outcome measure*

George Bigelow, Johns Hopkins University School of Medicine, Baltimore, MD

*State of the science on measuring drug use: Biological measures*

Kenzie Preston, NIDA, Baltimore, MD

*State of the science on measuring drug use: Self report*

Kathleen Carroll, Yale School of Medicine, West Haven, CT

*Beyond drug use: A systematic consideration of other outcomes in evaluations of treatments for substance use disorders*

Stephen T. Tiffany, University at Buffalo, SUNY, Buffalo, NY

*Discussant*

Dennis M. Donovan, University of Washington School of Medicine, Seattle, WA

## **Workshop XIII**

**Diplomat 1-2  
8:00 - 10:00 PM**

### **WHEN CLINICAL ADVERSE EVENTS SIGNAL DRUG ABUSE POTENTIAL**

Chairs: Edward M. Sellers and Kerri A. Schoedel

*Collecting abuse-related information in clinical trials: Weighing the use of structured and unstructured scales*

Kathleen T. Brady, Clinical Neurosciences Division, Medical University of South Carolina, Charleston, SC

*To like or not to like: What patterns of adverse events are indicative of abuse potential?*

Sian Ratcliffe, Clinical Development and Medical Affairs, Pfizer Ltd, Sandwich, United Kingdom

*Clinical common sense meets MedDRA: The Investigator's perspective*

Myroslava K. Romach, Kendle Early Stage, Toronto, ON, Canada

*FDA guidance on abuse potential-related adverse events assessment*

Michael Klein, Center for Drug Evaluation and Research, Food and Drug Administration, Silver Spring, MD

*Discussant*

Robert S. Mansbach, San Diego, CA

## **Film Night**

**Regency 2  
7:00 - 10:00 PM**

**AMERICAN METH** (Documentary, 2007)

*Directed by Justin Hunt, Narrated by Val Kilmer*

**MY NAME IS BILL W.** (1989)

*Starring James Woods and James Garner*

**CPDD/INRC Poster Session IV  
(Breakfast)**

**Great Hall 3-6  
7:30 - 9:30 AM**

**Odd-numbered posters manned first hour;**

**Even-numbered, second hour**

**Set-up time begins Wednesday 3:00 P.M.**

**Must be removed by Thursday 1:00 P.M.**

**PERINATAL**

- 1 *The effect of prenatal cocaine exposure and sex/gender on anthropometric growth through ages 16-17 years*  
S. E. Messiah<sup>1,2</sup>, K. L. Arheart<sup>2,1</sup>, D. C. Vidot<sup>1</sup>, M. K. Glavach<sup>1</sup>, V. H. Accornero<sup>1</sup>, L. Xue<sup>1</sup>, S. L. Lipshultz<sup>1</sup>, T. L. Miller<sup>1</sup>, E. S. Bandstra<sup>1</sup>, <sup>1</sup>Pediatrics, University of Miami Miller School of Medicine, Miami, FL, <sup>2</sup>Epidemiology and Public Health, University of Miami Miller School of Medicine, Miami, FL
- 2 *Executive function at 12 years in prenatally cocaine-exposed children*  
S. Minnes<sup>1</sup>, M. Min<sup>1</sup>, L. T. Singer<sup>2</sup>, E. J. Short<sup>3</sup>, A. Aguirre<sup>3</sup>, <sup>1</sup>Mandel School of Applied Social Sciences, Case Western Reserve University, Cleveland, OH, <sup>2</sup>School of Medicine, Case Western Reserve University, Cleveland, OH, <sup>3</sup>Psychology, Case Western Reserve University, Cleveland, OH
- 3 *Perinatal smoking and mood and anxiety disorders*  
A. Forray, N. Gotman, H. Howell, B. J. Rounsaville, K. A. Yonkers, Yale School of Medicine, New Haven, CT
- 4 *Prenatal tobacco use and mental health conditions in women at risk for other substance use*  
A. Sepulveda, D. Terrell, L. Keyser-Marcus, D. Svikis, Institute for Drug and Alcohol Studies, Virginia Commonwealth University, Richmond, VA
- 5 *Effects of anxiety and depression on treatment of opioid dependence during pregnancy*  
M. M. Benningfield<sup>1</sup>, M. S. Dietrich<sup>1</sup>, H. E. Jones<sup>2</sup>, K. Kaltenbach<sup>3</sup>, S. H. Heil<sup>4</sup>, S. M. Stine<sup>5</sup>, M. G. Coyle<sup>6</sup>, A. M. Arria<sup>7</sup>, P. Selby<sup>8</sup>, A. Baewert<sup>9</sup>, P. R. Martin<sup>1</sup>, <sup>1</sup>Vanderbilt University, Nashville, TN, <sup>2</sup>Johns Hopkins University, Baltimore, MD, <sup>3</sup>Thomas Jefferson University, Philadelphia, PA, <sup>4</sup>University of Vermont, Burlington, VT, <sup>5</sup>Wayne State University, Detroit, MI, <sup>6</sup>Brown University, Providence, RI, <sup>7</sup>University of Maryland, College Park, MD, <sup>8</sup>University of Toronto, Toronto, ON, Canada, <sup>9</sup>Medical University of Vienna, Vienna, Austria
- 6 *Feto-maternal outcome of pregnancy in women maintained on methadone but using illicit substances*  
J. L. Igboekwu, Forensic Psychiatry, Ravenswood Low Secure Hospital, Fareham, United Kingdom
- 7 *Infant pupil diameter in response to opioid administration*  
S. H. Heil<sup>1,2</sup>, D. Gaalema<sup>1</sup>, S. T. Higgins<sup>1,2</sup>, S. C. Sigmon<sup>1,2</sup>, A. Johnston<sup>3</sup>, <sup>1</sup>Psychiatry, University of Vermont, Burlington, VT, <sup>2</sup>Psychology, University of Vermont, Burlington, VT, <sup>3</sup>Pediatrics, University of Vermont, Burlington, VT
- 8 *Differences in the profile of neonatal abstinence syndrome signs in methadone- vs. buprenorphine-exposed infants*  
D. Gaalema<sup>1</sup>, S. Heil<sup>1</sup>, T. Scott<sup>1</sup>, M. Coyle<sup>2</sup>, K. Kaltenbach<sup>3</sup>, H. Jones<sup>4</sup>, P. Martin<sup>5</sup>, S. Stine<sup>6</sup>, A. Arria<sup>4</sup>, <sup>1</sup>U of Vermont, Burlington, VT, <sup>2</sup>Brown U, Providence, RI, <sup>3</sup>Thomas Jefferson U, Philadelphia, PA, <sup>4</sup>Johns Hopkins U, Baltimore, MD, <sup>5</sup>Vanderbilt U, Nashville, TN, <sup>6</sup>Wayne State U, Detroit, MI

- 9 *Absence of sex differences related to the neonatal abstinence syndrome among infants born to women in opioid agonist treatment*  
A. Unger<sup>1</sup>, R. Jagsch<sup>2</sup>, A. Bäwert<sup>1</sup>, B. Winklbaaur<sup>1</sup>, P. R. Martin<sup>3</sup>, M. Coyle<sup>4</sup>, K. Kaltenbach<sup>5</sup>, S. Heil<sup>6</sup>, S. Stine<sup>7</sup>, G. Fischer<sup>1</sup>, <sup>1</sup>Psychiatry, Medical University of Vienna, Vienna, Austria, <sup>2</sup>Psychology, University of Vienna, Vienna, Austria, <sup>3</sup>Psychiatry, Vanderbilt University School of Medicine, Nashville, TN, <sup>4</sup>Center for Young Adult Health and Development, University of Maryland, Maryland, MD, <sup>5</sup>Pediatrics, Thomas Jefferson University, Philadelphia, PA, <sup>6</sup>Psychiatry, University of Vermont, Burlington, VT, <sup>7</sup>Psychiatry, Wayne State University, Detroit, MI
- 10 *Comparison of maternal and neonatal outcome parameters in pregnant opioid-maintained women in a RCT vs. in standardized routine care*  
V. Metz<sup>1</sup>, K. Graf-Rohrmeister<sup>1</sup>, R. Jagsch<sup>2</sup>, N. Ebner<sup>1</sup>, J. Würzl<sup>1</sup>, A. Pribasni<sup>1</sup>, C. Aschauer<sup>1</sup>, G. Fischer<sup>1</sup>, <sup>1</sup>Medical University of Vienna, Vienna, Austria, <sup>2</sup>Faculty of Psychology, Vienna University, Vienna, Austria
- 11 *Evidence-based research in pregnant opioid-dependent women: A comparison of two European samples*  
B. Winklbaaur<sup>1</sup>, K. Graf-Rohrmeister<sup>2</sup>, R. Jagsch<sup>3</sup>, A. Baewert<sup>1</sup>, A. Unger<sup>1</sup>, V. Metz<sup>1</sup>, K. Thau<sup>1</sup>, G. Fischer<sup>1</sup>, <sup>1</sup>Department of Psychiatry & Psychotherapy, Medical University Vienna, Vienna, Austria, <sup>2</sup>Department of Neonatology, Medical University Vienna, Vienna, Austria, <sup>3</sup>Faculty of Psychology, University of Vienna, Vienna, Austria
- 12 *Effect of cocaine on treatment outcomes in opioid-using pregnant women*  
S. M. Stine<sup>1</sup>, P. Thakur<sup>1</sup>, H. Jones<sup>2</sup>, G. Fisher<sup>3</sup>, K. Kaltenbach<sup>4</sup>, S. Heil<sup>5</sup>, P. Martin<sup>6</sup>, M. Coyle<sup>7</sup>, P. Selby<sup>1</sup>, <sup>1</sup>Psychiatry and Behavioral Neurosciences, Wayne State University, Detroit, MI, <sup>2</sup>John's Hopkins University, Baltimore, MD, <sup>3</sup>University of Vienna, Vienna, Austria, <sup>4</sup>Thomas Jefferson University, Philadelphia, PA, <sup>5</sup>University of Vermont, Burlington, VT, <sup>6</sup>Vanderbilt University, Nashville, TN, <sup>7</sup>Brown University, Rhode Island, RI
- 13 *Comparison of buprenorphine and methadone treatment among Medicaid enrollees*  
A. Schuster<sup>1,2</sup>, K. Stoller<sup>3</sup>, P. Fagan<sup>1,3</sup>, <sup>1</sup>Johns Hopkins Healthcare LLC, Glen Burnie, MD, <sup>2</sup>Health Policy and Management, Johns Hopkins University SPH, Baltimore, MD, <sup>3</sup>Department of Psychiatry and Behavioral Sciences, Johns Hopkins University SOM, Baltimore, MD

### REWARD AND PUNISHMENT

- 14 *Does tolerance develop to the analgesic, rewarding and pro-emetic effects of oxycodone?*  
V. Batra, L. M. Schrott, Pharmacology, Toxicology and Neuroscience, Louisiana Health Sciences Center-Shreveport, Shreveport, LA
- 15 *Cholinergic modulation of reinforcement effects in a reinstatement model of drug relapse using sucrose reward*  
J. A. Pipkin, V. Greenfield, J. Valentine, A. Butt, Psychology, California State University, San Bernardino, San Bernardino, CA
- 16 *Gestational intravenous nicotine increases motivation for sucrose reward in adult rat offspring*  
R. T. Lacy, L. L. Hord, A. J. Morgan, S. B. Harrod, Psychology, University of South Carolina, Columbia, SC
- 17 *Are Oreo cookies addictive?*  
F. Leri, A. M. Levy, University of Guelph, Guelph, ON, Canada
- 18 *Individual differences in response to novelty associates with binge-like palatable food intake*  
N. C. Anastasio<sup>1,2</sup>, S. J. Stutz<sup>1,2</sup>, R. G. Fox<sup>1,2</sup>, J. D. Hommel<sup>1,2</sup>, K. A. Cunningham<sup>1,2</sup>, <sup>1</sup>Ctr Addiction Research, UTMB, Galveston, TX, <sup>2</sup>Pharm & Tox, UTMB, Galveston, TX

- 19 *Orx/Hcrt neurons, within different subregions of the hypothalamus, are differentially recruited by cues conditioned to cocaine vs. natural reward*  
R. Martin-Fardon, F. Weiss, Mol and Integrative Neuroscience, The Scripps Research Inst, La Jolla, CA
- 20 *The effect of the CB1 neutral antagonist PIMSR1 on appetitive disorders*  
H. H. Seltzman<sup>1</sup>, P. H. Reggio<sup>2</sup>, E. L. Gardner<sup>3</sup>, L. Chun<sup>3</sup>, Z. X. Xi<sup>3</sup>, G. H. Bi<sup>3</sup>, F. Navas, III<sup>1</sup>, J. A. Marusich<sup>1</sup>, J. L. Wiley<sup>1</sup>, <sup>1</sup>Research Triangle Institute, Research Triangle Park, NC, <sup>2</sup>University of North Carolina, Greensboro, NC, <sup>3</sup>National Institute on Drug Abuse, Baltimore, MD
- 21 *A comparison of the rewarding valences of stimulant treatments in adult and adolescent mice*  
E. B. Bisen-Hersh<sup>1,2</sup>, A. M. Myers<sup>1</sup>, E. A. Walker<sup>1,3</sup>, <sup>1</sup>Neuroscience Program, Temple University, Philadelphia, PA, <sup>2</sup>Psychology, Temple University, Philadelphia, PA, <sup>3</sup>Pharmaceutical Sciences, Temple University, Philadelphia, PA
- 22 *Novelty-seeking correlates with a stronger response of adolescent mice to the rewarding properties of cocaine in the conditioned place preference procedure*  
M. M. Rodriguez-Arias, R. Muñoz, M. A. Aguilar, J. Miñarro, Psychobiology, School of Psychology, Valencia, Spain
- 23 *Effects of punishment on seeking and consumption of cocaine and water reinforcers*  
M. A. Kausch, A. M. Gancarz, L. J. Beyley, D. R. Lloyd, M. A. Robble, J. B. Richards, Research Institute on Addictions, State University of New York at Buffalo, Buffalo, NY
- 24 *Punishment of cocaine choice: Effects of delaying punishment*  
W. L. Woolverton<sup>1</sup>, K. Freeman<sup>1</sup>, J. Myerson<sup>2</sup>, L. Green<sup>2</sup>, <sup>1</sup>Psychiatry, Univ of Mississippi Medical Ctr, Jackson, MS, <sup>2</sup>Psychology, Washington University, St. Louis, MO
- 25 *Exposure to alcohol during adolescence or adulthood alters the rewarding effects of cocaine in adult rats*  
M. Hutchison, A. L. Riley, Psychology, American University, Washington, DC

### STIMULANTS: ANIMAL II

- 26 *Activation of the corticotropin-releasing factor system in the amygdala is responsible for the reinstatement of methamphetamine-seeking behavior induced by footshock stress*  
Y. Nawata, K. Kitaichi, T. Yamamoto, Department of Pharmacology, Faculty of Pharmaceutical Science, Nagasaki International University, 2825-7 Huis Ten Bosch Sasebo, Japan
- 27 *Escalating vs. binge methamphetamine exposure reveals vulnerability of dopamine regulation in ventral tegmental area*  
C. Keller, M. F. Salvatore, S. Spann, G. F. Guerin, N. E. Goeders, Pharmacology, Toxicology & Neuroscience, LSU Health Sciences Center-Shreveport, Shreveport, LA
- 28 *Escalation and reinstatement of stimulant seeking in adolescent and adult rats*  
M. E. Carroll, N. A. Holtz, J. J. Anker, Psychiatry, University of Minnesota, Minneapolis, MN
- 29 *Stimulus control of escalated cocaine intake and escalation under short access sessions*  
J. Beckmann, C. Gipson, M. Bardo, University of Kentucky, Lexington, KY
- 30 *Spiking brain cocaine levels and the implications for a model of addiction*  
C. Dobrin, B. A. Zimmer, D. C. Roberts, Physiology and Pharmacology, Wake Forest University School of Medicine, Winston Salem, NC
- 31 *Relationship between impulsivity and amphetamine conditioned place preference*  
J. R. Yates, M. T. Bardo, Psychology, University of Kentucky, Lexington, KY

- 32 *Identifying traits that track with an increased risk for addiction vulnerability*  
R. G. Fox<sup>1,2</sup>, N. C. Anastasio<sup>1,2</sup>, S. J. Stutz<sup>1,2</sup>, F. G. Moeller<sup>3</sup>, R. B. Emeson<sup>4</sup>,  
K. A. Cunningham<sup>1,2</sup>, <sup>1</sup>Ctr Addiction Research, UTMB, Galveston, TX, <sup>2</sup>Pharm & Tox, UTMB,  
Galveston, TX, <sup>3</sup>Psych & Behav Sci, UTHSC, Houston, TX, <sup>4</sup>Ctr Molec Neurosci, Vanderbilt,  
Nashville, TN
- 33 *Prenatal stress and genetic background interact to determine cocaine-seeking behavior in mice*  
T. E. Kippin<sup>1,2</sup>, J. C. Campbell<sup>1</sup>, K. K. Szumlinski<sup>1,2</sup>, C. P. Knight<sup>1</sup>, K. Ploense<sup>1</sup>, N. Woodward<sup>1</sup>,  
<sup>1</sup>Psychology, University of California at Santa Barbara, Santa Barbara, CA, <sup>2</sup>Neuroscience  
Research Institute, University of California, Santa Barbara, CA
- 34 *Effect of single-prolonged stress, a model of PTSD, on anxiety and cocaine-induced behaviors*  
N. Enman, E. M. Unterwald, Pharmacology & Center for Substance Abuse Research, Temple  
University School of Medicine, Philadelphia, PA
- 35 *Effects of cross-drug preexposure on cocaine- and vanoxerine-induced conditioned taste  
aversions*  
K. M. Serafine<sup>1</sup>, K. C. Rice<sup>2</sup>, A. L. Riley<sup>1</sup>, <sup>1</sup>Psychology- Psychopharmacology Laboratory,  
American University, Washington, DC, <sup>2</sup>Chemical Biology Research Branch, National  
Institute on Drug Abuse and National Institute on Alcohol Abuse and Alcoholism,  
Bethesda, MD
- 36 *Accumbens dopamine bi-directionally regulates methamphetamine-seeking in mice*  
K. D. Lominac, K. K. Szumlinski, Psychology, University of California, Santa Barbara, Santa  
Barbara, CA
- 37 *Social interaction- vs. cocaine conditioned place preference is associated with a differential  
activation of nucleus accumbens shell cholinergic interneurons*  
G. Zernig, M. Fritz, S. Klement, R. El Rawas, A. Saria, Experimental Psychiatry Unit, General  
Psychiatry and Social Psychiatry, Medical University Innsbruck, Innsbruck, Austria
- 38 *Accumbens histone deacetylases actively regulate cocaine-seeking in cocaine-experienced mice*  
B. W. Miller<sup>1</sup>, T. E. Kippin<sup>1</sup>, E. J. Nestler<sup>2</sup>, K. K. Szumlinski<sup>1</sup>, <sup>1</sup>Psychology, University of  
California, Santa Barbara, Santa Barbara, CA, <sup>2</sup>Mount Sinai School of Medicine, New  
York, NY
- 39 *Profile of glutamate anomalies observed within the accumbens core during short-term  
withdrawal from excessive cocaine intake*  
S. M. Webb, B. W. Miller, A. D. Sacramento, A. Haider, K. D. Lominac, T. E. Kippin, O. Ben-  
Shahar, K. K. Szumlinski, Psychology, University of California, Santa Barbara, Santa  
Barbara, CA
- 40 *LY379268, a selective group II metabotropic glutamate receptor agonist, dose dependently  
decreases methamphetamine self-administration in rats*  
J. T. Crawford, D. C. Roberts, T. J. Beveridge, Physiology and Pharmacology, Wake Forest  
University Health Sciences, Winston Salem, NC
- 41 *Manipulations of ventral prefrontal cortex Group I mGluRs do not affect incubation of cue-  
induced reinstatement of cocaine-seeking behavior*  
O. Ben-Shahar, A. Sacramento, A. Caruana, S. Webb, E. Gordon, K. Ploense, N. Rudy,  
T. E. Kippin, K. K. Szumlinski, Psychology, UCSB, Santa Barbara, CA
- 42 *Contribution of corticosterone and neurosteroids to the efficacy of metyrapone in reducing  
cocaine-related behaviors*  
C. D. Schmoutz, G. F. Guerin, N. E. Goeders, LSU Health Sciences Center, Shreveport, LA

- 43 *Determining efficacious doses of metyrapone and oxazepam combinations to treat methamphetamine cue-reactivity in rats*  
E. M. Cornett, G. F. Guerin, N. E. Goeders, Pharmacology, Toxicology and Neuroscience, Louisiana State University Health Sciences Center, Shreveport, LA
- 44 *Inhibiting glycine transporter-1 during extinction training attenuates reacquisition of cocaine self-administration in squirrel monkeys and rats*  
C. Achat-Mendes<sup>1</sup>, B. A. Nic Dhonnchadha<sup>2</sup>, L. Hede-Brierley<sup>2</sup>, J. Whaley<sup>2</sup>, D. M. Platt<sup>1</sup>, K. M. Kantak<sup>2</sup>, R. D. Spealman<sup>1</sup>, <sup>1</sup>Harvard Medical School/NEPRC, Southborough, MA, <sup>2</sup>Boston University, Boston, MA
- 45 *Preclinical evaluation of GZ-793A as a pharmacotherapy for methamphetamine abuse*  
L. Dwoskin, J. Beckmann, D. Horton, K. Siripurapu, K. Alvers, G. Zheng, P. Crooks, M. Bardo, University of Kentucky, Lexington, KY
- 46 *PPAR $\gamma$  as a therapeutic target in drug abuse*  
W. R. Miller<sup>1,2</sup>, S. Stutz<sup>3</sup>, R. Fox<sup>3</sup>, K. Cunningham<sup>3</sup>, K. Dineley<sup>2</sup>, <sup>1</sup>Neuroscience, University of Texas Medical Branch, Galveston, TX, <sup>2</sup>Neurology, University of Texas Medical Branch, Galveston, TX, <sup>3</sup>Center for Addiction Research, Pharmacology and Toxicology, University of Texas Medical Branch, Galveston, TX
- 47 *Cocaine self-administration modifies hippocampal neuron morphology in Lewis rats*  
E. Ambrosio<sup>1</sup>, M. Miguéns<sup>1</sup>, A. Kastanauskaite<sup>1</sup>, S. M. Coria<sup>1</sup>, I. Ballesteros-Yañez<sup>2</sup>, J. De Felipe<sup>3</sup>, <sup>1</sup>Psychobiology, UNED, Madrid, Spain, <sup>2</sup>Inorganic, Organic and Biochemistry, Castilla La Mancha University, Ciudad Real, Spain, <sup>3</sup>Cajal Institute and Cortical Circuits Laboratory, Superior Council of Scientific Research, and Polytechnical University, Madrid, Spain
- 48 *Methamphetamine-induced cerebral blood flow changes and its implications as a risk for Parkinson's disease*  
S. M. Kousik<sup>1</sup>, T. C. Napier<sup>1,2</sup>, P. M. Carvey<sup>1</sup>, <sup>1</sup>Pharmacology, Rush University, Chicago, IL, <sup>2</sup>Center for Compulsive Behavior and Addiction, Chicago, IL
- 49 *Repeated administration of a mutant cocaine esterase: Effects on plasma cocaine levels, cocaine-induced cardiovascular activity, and immune responses in rhesus monkeys*  
G. T. Collins<sup>1</sup>, R. L. Brim<sup>1</sup>, D. Narasimhan<sup>1</sup>, K. R. Noon<sup>1</sup>, N. W. Lukacs<sup>2</sup>, R. K. Sunahara<sup>1</sup>, J. H. Woods<sup>1</sup>, M. C. Ko<sup>1</sup>, <sup>1</sup>Pharmacology, University of Michigan Medical School, Ann Arbor, MI, <sup>2</sup>Pathology, University of Michigan Medical School, Ann Arbor, MI

### IMAGING

- 50 *Orbital frontal cortex activity predicts executive cognitive functioning in early adolescents*  
Z. Zhai<sup>1</sup>, S. Pajtek<sup>2</sup>, E. C. Long<sup>2</sup>, B. Luna<sup>2</sup>, T. A. Ridenour<sup>1</sup>, D. B. Clark<sup>2</sup>, <sup>1</sup>University of Pittsburgh, Pittsburgh, PA, <sup>2</sup>Western Psychiatric Institute and Clinic, Pittsburgh, PA
- 51 *"Unseen" vulnerability: Cocaine relapse is associated with limbic activation to drug cues presented outside awareness*  
A. R. Childress<sup>1,2</sup>, J. J. Suh<sup>1,2</sup>, R. N. Ehrman<sup>1,2</sup>, Y. Li<sup>1</sup>, Z. Wang<sup>1</sup>, A. V. Hole<sup>1,2</sup>, R. Fabianski<sup>1</sup>, D. Willard<sup>1</sup>, T. Franklin<sup>1</sup>, M. Goldman<sup>1</sup>, R. Szucs-Reed<sup>1,2</sup>, J. Magland<sup>1</sup>, C. Tjoa<sup>1</sup>, C. P. O'Brien<sup>1,2</sup>, <sup>1</sup>Univ. of Pennsylvania School of Medicine, Philadelphia, PA, <sup>2</sup>VA VISN 4 MIRECC, Philadelphia, PA
- 52 *Can an acute dose of baclofen reduce the risk of relapse in cue-vulnerable smokers?*  
T. Franklin, Z. Wang, J. Shin, R. Hazan, R. Carson, R. Fabianski, D. Willard, J. J. Suh, M. Goldman, Y. Li, C. P. O'Brien, A. R. Childress, Psychiatry, University of Pennsylvania SOM, Philadelphia, PA



- 53 *Characterizing brain substrates of affect dysregulation in cocaine dependence*  
J. Suh<sup>1,2</sup>, R. Ehrman<sup>1,2</sup>, Y. Li<sup>1</sup>, Z. Wang<sup>1</sup>, D. Willard<sup>1</sup>, R. Fabianski<sup>1</sup>, R. Carson<sup>1</sup>, R. Hazan<sup>1</sup>, J. Shin<sup>1</sup>, R. Szucs-Reed<sup>1,2</sup>, M. Goldman<sup>1</sup>, T. Franklin<sup>1</sup>, C. P. O'Brien<sup>1,2</sup>, A. R. Childress<sup>1,2</sup>, <sup>1</sup>Dept of Psychiatry, U of Pennsylvania, Philadelphia, PA, <sup>2</sup>MIRECC, VAMC, Philadelphia, PA
- 54 *Feeling left out? Predicting the behavioral and brain response to social stress*  
C. A. Hanlon<sup>1,2</sup>, A. Lack<sup>2</sup>, L. J. Porrino<sup>2</sup>, <sup>1</sup>Medical University of South Carolina, Charleston, SC, <sup>2</sup>Wake Forest University School of Medicine, Winston-Salem, NC
- 55 *N-acetylcysteine changes glutamate levels in cocaine-dependent subjects: An open label magnetic resonance spectroscopy study*  
L. Schmaal, A. E. Goudriaan, D. J. Veltman, W. Van den Brink, Academic Medical Center, Amsterdam, Netherlands
- 56 *DCM of working memory system in cocaine dependence*  
L. Ma<sup>1</sup>, J. L. Steinberg<sup>1</sup>, K. M. Hasan<sup>2</sup>, P. A. Narayana<sup>2</sup>, L. A. Kramer<sup>2</sup>, F. G. Moeller<sup>1</sup>, <sup>1</sup>Department of Psychiatry and Behavioral Sciences, University of Texas Health Science Center, Houston, TX, <sup>2</sup>Department of Diagnostic and Interventional Imaging, University of Texas Health Science Center, Houston, TX
- 57 *In vivo evidence for lower striatal vesicular monoamine transporter in cocaine abusers*  
R. Narendran<sup>1</sup>, D. Martinez<sup>2</sup>, B. Lopresti<sup>1</sup>, N. S. Mason<sup>1</sup>, P. Keating<sup>1</sup>, M. Himes<sup>1</sup>, C. Mathis<sup>1</sup>, W. G. Frankle<sup>1</sup>, <sup>1</sup>Radiology, University of Pittsburgh, Pittsburgh, PA, <sup>2</sup>Psychiatry, Columbia University Medical Center, New York, NY
- 58 *PET imaging of dopamine transmission in cocaine dependence predicts response to treatment*  
D. Martinez, K. Carpenter, F. Liu, M. Slifstein, A. Broft, A. Calvo-Friedman, H. Kleber, E. Nunes, Columbia University/NYSPI, New York, NY
- 59 *Functional neuroimaging of the subjective effects of intranasal d-amphetamine*  
T. H. Kelly<sup>1</sup>, C. S. Kluemper<sup>1</sup>, C. E. Emurian<sup>1</sup>, C. R. Corbly<sup>1</sup>, C. R. Martin<sup>1</sup>, J. E. Joseph<sup>2</sup>, J. A. Lile<sup>1</sup>, <sup>1</sup>University of Kentucky, Lexington, KY, <sup>2</sup>Medical University of South Carolina, Charleston, SC
- 60 *Amphetamine-opioid interactions in the human brain reward system—a PET study using [<sup>11</sup>C]carfentanil*  
J. Guterstam, N. Jayaram-Lindström, S. Cervenka, L. Farde, C. Halldin, J. Franck, Karolinska Institutet, Stockholm, Sweden
- 61 *Neural correlates of reward processing in methamphetamine use*  
G. Tau<sup>1,2</sup>, T. Pampanini<sup>1,2</sup>, T. Torres-Sanchez<sup>1,2</sup>, P. Wang<sup>1,2</sup>, B. Graniello<sup>1,2</sup>, F. Tian<sup>1,2</sup>, B. Gunter<sup>1,2</sup>, F. Garcia<sup>1,2</sup>, Z. Wang<sup>1,2</sup>, D. Martinez<sup>2</sup>, B. S. Peterson<sup>1,2</sup>, <sup>1</sup>Child and Adolescent Psychiatry, Columbia University / New York State Psychiatric Institute, New York, NY, <sup>2</sup>Psychiatry, Columbia University / New York State Psychiatric Institute, New York, NY
- 62 *Altered brain high energy phosphate levels in methamphetamine-dependent women*  
Y. H. Sung<sup>1</sup>, D. A. Yurgelun-Todd<sup>1,3,4</sup>, X. Shi<sup>2</sup>, D. G. Kondo<sup>1</sup>, K. J. Lundberg<sup>1</sup>, E. C. McGlade<sup>1</sup>, R. E. Harrell<sup>1</sup>, T. L. Hellem<sup>1</sup>, R. S. Huber<sup>1</sup>, K. K. Delmastro<sup>1</sup>, S. E. Kim<sup>2</sup>, E. K. Jeong<sup>2</sup>, P. F. Renshaw<sup>1,3,4</sup>, <sup>1</sup>Depart. of Psychiatry, Brain Institute, Salt Lake City, UT, <sup>2</sup>Depart. of Radiology, UCAIR, Salt Lake City, UT, <sup>3</sup>VISN 19 MIRECC, Salt Lake City, UT, <sup>4</sup>USTAR, Salt Lake City, UT

- 63 *Differential neuroanatomical correlates of adolescent and adult methamphetamine abuse*  
I. Lyoo<sup>1,2</sup>, S. J. Yoon<sup>3</sup>, T. S. Kim<sup>3</sup>, J. Hwang<sup>4</sup>, J. E. Kim<sup>1</sup>, S. J. Bae<sup>1</sup>, D. J. Kim<sup>1</sup>, P. F. Renshaw<sup>2</sup>,  
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- 64 *Investigating changes in fractional anisotropy in white matter of methamphetamine users using diffusion tensor imaging*  
J. C. Lin<sup>1,2</sup>, R. K. Jan<sup>1,2</sup>, R. R. Kydd<sup>3,2</sup>, B. R. Russell<sup>1,2</sup>, <sup>1</sup>School of Pharmacy, The University of Auckland, Auckland, New Zealand, <sup>2</sup>Centre for Brain Research, The University of Auckland, Auckland, New Zealand, <sup>3</sup>Department of Psychological Medicine, The University of Auckland, Auckland, New Zealand
- 65 *The effect of methamphetamine on grey matter structure in the human brain using voxel-based morphometry*  
R. K. Jan<sup>1,2</sup>, J. C. Lin<sup>1,2</sup>, R. R. Kydd<sup>3,2</sup>, B. R. Russell<sup>1,2</sup>, <sup>1</sup>School of Pharmacy, University of Auckland, Auckland, New Zealand, <sup>2</sup>Centre for Brain Research, University of Auckland, Auckland, New Zealand, <sup>3</sup>Department for Psychological Medicine, University of Auckland, Auckland, New Zealand
- 66 *Differentiating the association between cigarette smoking and methamphetamine use on gray matter abnormalities seen in methamphetamine abusers*  
A. M. Morales<sup>1,4</sup>, B. Lee<sup>2</sup>, J. O'Neill<sup>2</sup>, E. London<sup>2,3,4</sup>, <sup>1</sup>Neuroscience Program, UCLA, Los Angeles, CA, <sup>2</sup>Psychiatry and Biobehavioral Sciences, UCLA, Los Angeles, CA, <sup>3</sup>Molecular and Medical Pharmacology, UCLA, Los Angeles, CA, <sup>4</sup>Brain Research Institute, UCLA, Los Angeles, CA
- 67 *Reduced hippocampal volumes in regular cannabis users*  
V. Lorenzetti<sup>1</sup>, N. Solowij<sup>2</sup>, A. Fornito<sup>1</sup>, D. Lubman<sup>3</sup>, M. Takagi<sup>1</sup>, C. Pantelis<sup>1</sup>, M. Seal<sup>4</sup>, M. Yucel<sup>1</sup>, <sup>1</sup>Psychiatry, Melbourne Neuropsychiatry Centre, East Brunswick, VIC, Australia, <sup>2</sup>Psychology, University of Wollongong, Wollongong, NSW, Australia, <sup>3</sup>Turning Point Alcohol and Drug Centre, Melbourne, VIC, Australia, <sup>4</sup>Murdoch Childrens Research Institute, Melbourne, VIC, Australia
- 68 *Unexpected changes in striatal activation with treatment during the guess/reward fMRI task in comorbid MDD-CUD youth*  
J. R. Cornelius<sup>1</sup>, H. Aizenstein<sup>1</sup>, T. Chung<sup>1</sup>, A. Douaihy<sup>1</sup>, I. Salloum<sup>2</sup>, D. Daley<sup>1</sup>, <sup>1</sup>Psychiatry, University of Pittsburgh, Pittsburgh, PA, <sup>2</sup>Psychiatry, University of Miami, Miami, FL
- 69 *Brain activity related to decision-making among adolescents in substance abuse treatment*  
S. R. Ryan, C. Stanger, A. Elton, Z. Gubrij, A. James, C. Kilts, W. Bickel, A. Budney, Psychiatric Research Institute, University of Arkansas for Medical Sciences, Little Rock, AR
- 70 *Neuroimaging heavy cannabis users vs. sporadic and non-users: Working memory and decision-making*  
A. E. Goudriaan<sup>1</sup>, J. Cousijn<sup>1</sup>, L. Porrino<sup>2</sup>, W. van den Brink<sup>1</sup>, D. J. Veltman<sup>1</sup>, R. W. Wiers<sup>1</sup>, <sup>1</sup>Dept. of Psychiatry, Academic Medical Centre, Amsterdam, Netherlands, <sup>2</sup>Physiology and Pharmacology, Wake Forest University, School of Medicine, Winston-Salem, NC
- 71 *Nicotine effects on default mode and extra-striate resting state networks*  
J. Tanabe, E. Nyberg, L. Martin, D. Cordes, E. Kronberg, J. Tregellas, University of Colorado Denver SOM, Aurora, CO

- 72 *Functional MRI-based support vector machine classification of tobacco smokers' nicotine craving: Possible use in real-time neurofeedback*  
Y. S. Shah<sup>1</sup>, S. J. Peltier<sup>1</sup>, L. Hernandez-Garcia<sup>1</sup>, D. C. Noll<sup>1</sup>, K. L. Phan<sup>1</sup>, J. K. Zubieta<sup>1</sup>, M. K. Greenwald<sup>2</sup>, <sup>1</sup>University of Michigan, Ann Arbor, MI, <sup>2</sup>Wayne State University, Detroit, MI
- 73 *Anterior cingulate proton spectroscopy glutamate levels differ as a function of smoking cessation outcome*  
Y. Mashhoon<sup>1</sup>, A. C. Janes<sup>1</sup>, J. E. Jensen<sup>1</sup>, A. P. Prescott<sup>1</sup>, G. Pachas<sup>2</sup>, P. F. Renshaw<sup>1</sup>, M. Fava<sup>2</sup>, A. E. Evins<sup>2</sup>, M. J. Kaufman<sup>1</sup>, <sup>1</sup>Neuroimaging Center, McLean Hospital | Harvard Medical School, Belmont, MA, <sup>2</sup>Massachusetts General Hospital | Harvard Medical School, Boston, MA
- 74 *The effects of nicotine and non-nicotine components of cigarette smoking on cerebral blood flow*  
M. Addicott<sup>1</sup>, R. Kozink<sup>1</sup>, T. Harshbarger<sup>2</sup>, B. Froeliger<sup>1</sup>, D. Ban<sup>1</sup>, J. Rose<sup>1</sup>, F. J. McClernon<sup>1</sup>, <sup>1</sup>Psychiatry, Duke Medical Center, Durham, NC, <sup>2</sup>Radiology, Duke Medical Center, Durham, NC

### GENETICS

- 75 *Cocaine-induced changes in prefrontal cortex glutamate receptor expression depend upon Homer1 and Homer2 proteins*  
A. W. Ary, B. W. Miller, C. L. McKenna, L. M. Smith, K. K. Szumlinski, Psychology, University of California, Santa Barbara, Santa Barbara, CA
- 76 *Sway: A new genetic model for diminished cocaine-reinforced behavior*  
K. Grasing<sup>1</sup>, S. He<sup>1</sup>, Y. Yang<sup>1</sup>, E. Bryda<sup>2</sup>, <sup>1</sup>Substance Abuse Research Laboratory, VA Medical Center, Kansas City, MO, <sup>2</sup>Veterinary Medicine, University of Missouri, Columbia, MO
- 77 *Dopamine transporter, substance abuse, and sex differences in novelty-seeking*  
R. Ashare<sup>1</sup>, C. Hodgkinson<sup>2</sup>, M. Enoch<sup>2</sup>, D. Goldman<sup>2</sup>, R. Sinha<sup>1</sup>, <sup>1</sup>Yale University, New Haven, CT, <sup>2</sup>LNG at NIAAA, Bethesda, MD
- 78 *Compulsive drug-taking behavior: Interaction of specific genetic variants with response to cocaine vaccine on treatment effectiveness in cocaine dependence*  
J. A. Lindsay, D. Nielsen, T. R. Kosten, Baylor College of Medicine, Houston, TX
- 79 *Preliminary pharmacogenetic study of treatment for methamphetamine dependence*  
K. G. Heinzerling, J. McCracken, L. Ray, A. Swanson, S. Shoptaw, UCLA, Los Angeles, CA
- 80 *Genome-wide association study of addiction to smoking and other substances of abuse*  
M. D. Li<sup>1</sup>, S. G. Yi<sup>1</sup>, J. Z. Ma<sup>2</sup>, <sup>1</sup>Psychiatry and Neurobehavioral Sciences, University of Virginia, Charlottesville, VA, <sup>2</sup>Public Health Sciences, University of Virginia, Charlottesville, VA
- 81 *ANKK1 polymorphisms may influence beta2-nicotinic acetylcholine receptor availability in nonsmokers*  
K. Cosgrove<sup>1</sup>, B. Yang<sup>1</sup>, I. Esterlis<sup>1</sup>, D. Lee<sup>1</sup>, R. Gadsden<sup>1</sup>, S. Helmbrecht<sup>1</sup>, F. Bois<sup>1</sup>, J. Seibyl<sup>2</sup>, G. Tamagnan<sup>2</sup>, J. Staley<sup>1</sup>, J. Gelernter<sup>1</sup>, <sup>1</sup>Psychiatry, Yale University School of Medicine, New Haven, CT, <sup>2</sup>Institute for Neurodegenerative Disorders, New Haven, CT
- 82 *Learning and memory differences in the dopamine receptor D2 Taq1A & C957T gene SNP among HIV-positive alcohol abusers*  
P. Khatavkar<sup>1</sup>, V. Bryant<sup>1</sup>, M. José-Míguez Perez<sup>1</sup>, R. Malow<sup>1</sup>, B. Lerner<sup>1</sup>, J. Dévieux<sup>1</sup>, R. Rosenberg<sup>1</sup>, N. Gandhi<sup>2</sup>, M. Nair<sup>2</sup>, <sup>1</sup>Stempel College of Social Work and Public Health, Florida International University, North Miami, FL, <sup>2</sup>Immunology, Institute of Neuro-Immune Pharmacology, Florida International University, Miami, FL

- 83 *Comparative gene expression profiling analysis of lymphoblastoid cells in heroin addicts*  
C. Chen<sup>1</sup>, D. Liao<sup>2</sup>, M. Cheng<sup>3</sup>, S. Hsu<sup>1</sup>, C. Lai<sup>1</sup>, H. Tsai<sup>1</sup>, <sup>1</sup>National Health Research Institutes, Zhunan, Taiwan, <sup>2</sup>Bali Psychiatric Center, Taipei, Taiwan, <sup>3</sup>Yuli Mental Health Research Center, Hualien, Taiwan
- 84 *GABRA2 and parental control in relation to adolescent substance use: The TRAILS study*  
H. E. Creemers<sup>1,2</sup>, R. Veenstra<sup>3</sup>, D. Dick<sup>4</sup>, J. Meyers<sup>4</sup>, F. van Oort<sup>2</sup>, W. Vollebergh<sup>5</sup>, J. Ormel<sup>3</sup>, F. Verhulst<sup>2</sup>, A. Huizink<sup>1</sup>, <sup>1</sup>University of Amsterdam, Amsterdam, Netherlands, <sup>2</sup>Erasmus Medical Center, Rotterdam, Netherlands, <sup>3</sup>Groningen University, Groningen, Netherlands, <sup>4</sup>Virginia Commonwealth University, Richmond, VA, <sup>5</sup>Utrecht University, Utrecht, Netherlands
- 85 *Genetic and environmental contributions to cannabis withdrawal and abuse/dependence in a national adult twin sample*  
N. O. Nat<sup>1</sup>, A. Agrawal<sup>2</sup>, H. E. Creemers<sup>1</sup>, A. C. Huizink<sup>1</sup>, N. G. Martin<sup>3</sup>, M. T. Lynskey<sup>2</sup>, <sup>1</sup>University of Amsterdam, Amsterdam, Netherlands, <sup>2</sup>Washington University School of Medicine, Saint Louis, MO, <sup>3</sup>Queensland Institute of Medical Research, Herston, QLD, Australia
- 86 *A low-density gene array association study implicates different pathways in primary affective disorders vs. those comorbid with substance dependence*  
D. Cui<sup>1</sup>, H. Kranzler<sup>3</sup>, H. Zhang<sup>2</sup>, L. Price<sup>4</sup>, L. Carpenter<sup>4</sup>, A. Tyrka<sup>4</sup>, J. Gelernter<sup>2</sup>, <sup>1</sup>Shanghai Mental Health Center, Shanghai Jiao Tong University, School of Medicine, Shanghai, China, <sup>2</sup>Psychiatry, Yale University, New Haven, CT, <sup>3</sup>Psychiatry, University of Pennsylvania, Philadelphia, PA, <sup>4</sup>Psychiatry, Brown University, Providence, RI

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- 87 *Discriminative properties and cytotoxicities of cannabinoid receptor agonist CP 55,490*  
M. Funada, K. Tomiyama, K. Wada, Drug Dependence Research, NIMH, NCNP, Kodaira, Japan
- 88 *Recipe for THC-like abuse: JWH indole-derived cannabinoids and K2/Spice*  
J. A. Marusich<sup>1</sup>, J. Huffman<sup>2</sup>, J. Wiley<sup>1</sup>, <sup>1</sup>RTI, International, Research Triangle Pk, NC, <sup>2</sup>Clemson University, Clemson, SC
- 89 *The relationship between objective and subjective effects measures used in abuse liability testing: An exploratory analysis using opioid agonists*  
M. J. Shram<sup>1</sup>, K. A. Schoedel<sup>1</sup>, B. Chakraborty<sup>1</sup>, B. Setnik<sup>2</sup>, V. Goli<sup>2,3</sup>, M. K. Romach<sup>1,4</sup>, <sup>1</sup>Kendle Early Stage, Toronto, ON, Canada, <sup>2</sup>King Pharmaceuticals, Raleigh, NC, <sup>3</sup>Departments of Anesthesiology, Psychiatry and Behavioral Sciences, Duke University, Durham, NC, <sup>4</sup>Department of Psychiatry, University of Toronto, Toronto, ON, Canada
- 90 *Marijuana self-administration in high- and low- impulsive sensation seekers using a modified progressive-ratio procedure*  
D. C. Lee, J. A. Lile, C. G. Robbins, C. A. Martin, T. H. Kelly, University of Kentucky, Lexington, KY
- 91 *Childhood ADHD and adult marijuana use*  
K. J. Derefinco<sup>1</sup>, M. MacLean<sup>3</sup>, P. A. Graziano<sup>1</sup>, B. S. Molina<sup>2</sup>, E. Gnagy<sup>1</sup>, W. E. Pelham<sup>1</sup>, <sup>1</sup>Florida International University, Miami, FL, <sup>2</sup>University of Pittsburgh, Pittsburgh, PA, <sup>3</sup>Buffalo State College, Buffalo, NY
- 92 *Vulnerability for SUD, drug use and risk for violent behavior*  
M. D. Reynolds, R. E. Tarter, L. Kirisci, CEDAR, School of Pharmacy, University of Pittsburgh, Pittsburgh, PA

- 93 *Acute stress response in marijuana smokers with and without past trauma exposure*  
G. Bedi<sup>1,2</sup>, Z. D. Cooper<sup>1,2</sup>, M. Haney<sup>1,2</sup>, <sup>1</sup>Columbia University, New York, NY, <sup>2</sup>NYSPI, New York, NY
- 94 *Effect of stress on attentional bias and cognition in marijuana-dependent individuals*  
K. L. Price, N. A. Baker, K. S. Nicholas, K. S. Allenby, C. B. McWhite, K. S. Fischer, K. T. Brady, Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston, SC
- 95 *Verbal and visual learning and memory in short- and long-term heavy cannabis users*  
N. Solowij<sup>2</sup>, M. Takagi<sup>1,3</sup>, M. L. Seal<sup>4</sup>, V. Lorenzetti<sup>1</sup>, I. H. Harding<sup>1</sup>, D. I. Lubman<sup>5</sup>, M. Yücel<sup>1,3</sup>, <sup>1</sup>Psychiatry, University of Melbourne, Carlton South, VIC, Australia, <sup>2</sup>Psychology, University of Wollongong, Wollongong, VIC, Australia, <sup>3</sup>Orygen Youth Health Research Centre, Melbourne, VIC, Australia, <sup>4</sup>Murdoch Children's Research Institute, Melbourne, VIC, Australia, <sup>5</sup>Turning Point Alcohol and Drug Centre, Melbourne, VIC, Australia
- 96 *Oral THC does not block the discriminative stimulus effects of marijuana in cannabis-dependent individuals*  
L. H. Lundahl, C. L. Steinmiller, M. K. Greenwald, C. E. Johanson, Psychiatry and Behavioral Neuroscience, Wayne State University School of Medicine, Detroit, MI
- 97 *Dose effects of oral THC in heavy cannabis users*  
R. Vandrey, M. L. Stitzer, Johns Hopkins University, Baltimore, MD
- 98 *Cannabis withdrawal syndrome in DSM-V*  
D. Gorelick<sup>1</sup>, K. H. Levin<sup>1</sup>, M. L. Copersino<sup>2</sup>, S. J. Heishman<sup>1</sup>, F. Liu<sup>3</sup>, D. L. Boggs<sup>3</sup>, D. L. Kelly<sup>3</sup>, <sup>1</sup>IRP, NIH/NIDA, Baltimore, MD, <sup>2</sup>McLean Hospital/Harvard Medical School, Belmont, MA, <sup>3</sup>MPRC, Univ. of Maryland, Baltimore, MD
- 99 *A disability-adjusted cannabis withdrawal scale reveals withdrawal symptoms associated with relapse*  
D. Allsop<sup>1</sup>, M. M. Norberg<sup>1</sup>, A. J. Budney<sup>2</sup>, J. Copeland<sup>1</sup>, <sup>1</sup>Medicine, University of New South Wales, Sydney, NSW, Australia, <sup>2</sup>Psychiatry, University of Arkansas for Medical Sciences, Little Rock, AR
- 100 *Effect of tobacco cigarette smoking on marijuana withdrawal and relapse*  
M. Haney, Z. D. Cooper, G. Bedi, S. K. Vosburg, S. D. Comer, R. W. Foltin, Psychiatry, Columbia University and NY State Psychiatric Institute, NY, NY
- 101 *Impact of cigarette use on treatment outcome in blunt smokers and other cannabis users in a cannabis-dependent sample*  
D. J. Brooks<sup>1</sup>, J. J. Mariani<sup>2,1</sup>, F. R. Levin<sup>2,1</sup>, <sup>1</sup>Substance Abuse, NYSPI, New York, NY, <sup>2</sup>Psychiatry, Columbia University, New York, NY
- 102 *Cognitive behavioral therapy and the nicotine transdermal patch for dual nicotine and cannabis dependence: A pilot study*  
K. P. Hill, L. Toto, S. F. Greenfield, G. Trksak, J. M. Rodolico, S. E. Lukas, Alcohol and Drug Abuse Treatment Program, McLean Hospital, Belmont, MA
- 103 *Motivational enhancement and mindfulness meditation for young adult female marijuana users*  
M. A. de Dios<sup>1,2</sup>, D. Herman<sup>1,2</sup>, C. Hagerty<sup>2</sup>, B. J. Anderson<sup>2</sup>, W. Britton<sup>1,2</sup>, M. Stein<sup>2,3</sup>, <sup>1</sup>Psychiatry and Human Behavior, Alpert Medical School of Brown University, Providence, RI, <sup>2</sup>General Medicine Research Unit, Butler Hospital, Providence, RI, <sup>3</sup>Medicine, Alpert Medical School, Providence, RI
- 104 *Marijuana purchasing behavior among young-adult marijuana users*  
R. Collins, P. C. Vincent, C. Vetter, M. Lambiase, M. Insana, D. Saltino, Community Health and Health Behavior, University at Buffalo, Buffalo, NY

- 105 *Marijuana users' social networks, marijuana use, and problems*  
P. C. Vincent<sup>2,1</sup>, R. L. Collins<sup>1,2</sup>, S. Wilson<sup>2</sup>, J. Smith<sup>2</sup>, M. Insana<sup>1</sup>, <sup>1</sup>Health Behavior/SPHHP, University at Buffalo, SUNY, Buffalo, NY, <sup>2</sup>Research Institute on Addictions, Buffalo, NY
- 106 *Randomized controlled trial of a web-based intervention for cannabis use*  
S. Rooke<sup>1</sup>, J. Copeland<sup>1</sup>, M. Norberg<sup>1</sup>, J. McCambridge<sup>2</sup>, <sup>1</sup>National Cannabis Prevention and Information Centre, University of New South Wales, Randwick, NSW, Australia, <sup>2</sup>University of London, London, United Kingdom
- 107 *Randomized controlled trial of a brief cannabis intervention delivered by telephone*  
P. J. Gates<sup>1</sup>, J. Copeland<sup>1</sup>, M. Norberg<sup>1</sup>, E. Digiusto<sup>2</sup>, <sup>1</sup>National Cannabis Prevention and Information Centre, Sydney, NSW, Australia, <sup>2</sup>National Drug and Alcohol Research Centre, Sydney, NSW, Australia
- 108 *A pilot study of postal treatment for cannabis dependence*  
J. Copeland<sup>1,2</sup>, T. E. Wright<sup>1,2</sup>, M. M. Norberg<sup>1,2</sup>, K. Hickey<sup>1,2</sup>, <sup>1</sup>National Cannabis Prevention and Information Centre, University of New South Wales, Randwick, NSW, Australia, <sup>2</sup>National Drug and Alcohol Research Centre, University of New South Wales, Randwick, NSW, Australia
- 109 *Towards defining primary outcomes in treatment studies for cannabis use disorders: Results from confirmatory factor analysis of outcomes from three randomized controlled trials*  
E. N. Peters, C. Nich, K. M. Carroll, Psychiatry, Yale University School of Medicine, New Haven, CT
- 110 *Associations of women's coping resources with lifetime marijuana use and alcohol abuse across racial ethnic groups: Results from a national survey*  
S. Balan, G. Widner, R. K. Price, Washington University in St. Louis School of Medicine, St. Louis, MO

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A. A. Elkoussi, M. A. Elshahed, M. S. Abdelrahman, Pharmacology, Assiut College of Medicine, Assiut, Egypt
- 112 *Discriminative stimulus effects of propofol*  
M. J. Forster, M. B. Gatch, Pharmacology & Neuroscience, UNT Health Science Center, Fort Worth, TX
- 113 *Individual differences in the likelihood of rebound insomnia*  
S. Randall<sup>1</sup>, T. Roehrs<sup>1,2</sup>, E. Harris<sup>1</sup>, R. Maan<sup>1</sup>, T. Roth<sup>1,2</sup>, <sup>1</sup>Henry Ford Health System, Detroit, MI, <sup>2</sup>Psychiatry & Behavioral Neuroscience, Wayne State University School of Medicine, Detroit, MI
- 114 *Acute tolerance to chlordiazepoxide qualitatively changes the interaction between flumazenil and pregnanolone in rhesus monkeys discriminating midazolam*  
L. R. Gerak<sup>1</sup>, C. P. France<sup>1,2</sup>, <sup>1</sup>Pharmacology, University of Texas Health Science Center at San Antonio, San Antonio, TX, <sup>2</sup>Psychiatry, University of Texas Health Science Center at San Antonio, San Antonio, TX
- 115 *Psychiatrist decision-making towards prescribing benzodiazepines: The dilemma with substance abusers*  
C. Marienfeld, E. Tek, E. Diaz, R. Schottenfeld, Psychiatry, Yale University, New Haven, CT
- 116 *Benzodiazepine use in methadone maintenance treatment patients*  
A. K. Mamczur<sup>1</sup>, J. J. Mariani<sup>1</sup>, R. Brady<sup>2</sup>, E. V. Nunes<sup>1</sup>, F. R. Levin<sup>1</sup>, <sup>1</sup>Psychiatry/Division on Substance Abuse, Columbia University/New York State Psychiatric Institute, New York, NY, <sup>2</sup>Narco Freedom, Inc., New York, NY

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- 117 *Increase of brain activity and change in REM sleep induced by ketamine: Possible relationship to its psychotomimetic effect*  
K. Takeda<sup>1</sup>, M. Narita<sup>1</sup>, K. Yoshizawa<sup>1</sup>, M. Rahmadi<sup>1</sup>, S. Hirayama<sup>1,2</sup>, H. Nagase<sup>2</sup>, N. Kuzumaki<sup>1</sup>, T. Suzuki<sup>1</sup>, <sup>1</sup>Toxicology, Hoshi Univ. Sch. Pharm. Pharmaceut. Sci., Tokyo, Japan, <sup>2</sup>Medicinal Chemistry, Sch. Pharm. Kitasato Univ., Tokyo, Japan
- 118 *Evidence for molecular changes in the circadian system following MDMA treatment*  
R. P. Ogeil<sup>1</sup>, D. J. Kennaway<sup>2</sup>, M. D. Salkeld<sup>2</sup>, S. M. Rajaratnam<sup>1</sup>, J. H. Broadbear<sup>1</sup>, <sup>1</sup>School of Psychology and Psychiatry, Monash University, Clayton, VIC, Australia, <sup>2</sup>Discipline of Obstetrics & Gynecology, University of Adelaide, Adelaide, SA, Australia
- 119 *Does sex, age and drug history affect behavioral responses to low-dose MDMA and amphetamine in a sensitization paradigm?*  
J. D'Souza, J. H. Broadbear, School of Psychology and Psychiatry, Monash University, Clayton, VIC, Australia
- 120 *MDMA (ecstasy) impairs short-term memory recognition in rats*  
S. A. Perrine<sup>1</sup>, A. N. Prussack<sup>1</sup>, A. L. Eagle<sup>1</sup>, D. M. Thomas<sup>3,4</sup>, M. P. Galloway<sup>1,2</sup>, <sup>1</sup>Psychiatry and Behavioral Neurosciences, Wayne State University School of Medicine, Detroit, MI, <sup>2</sup>Anesthesiology, Wayne State University School of Medicine, Detroit, MI, <sup>3</sup>Pharmaceutical Science, Eugene Applebaum College of Pharmacy and Health Sciences, Wayne State University, Detroit, MI, <sup>4</sup>Research Services, John D. Dingell VA Medical Center, Detroit, MI
- 121 *Human MDMA (Ecstasy) users have altered brain activation during semantic encoding*  
T. J. Watkins<sup>1,2</sup>, V. Raj<sup>1,2</sup>, D. R. Di Iorio<sup>1,2</sup>, M. Dietrich<sup>1</sup>, S. Park<sup>3</sup>, J. U. Blackford<sup>1</sup>, R. Cowan<sup>1,2</sup>, <sup>1</sup>Psychiatric Neuroimaging Program, Vanderbilt University, Nashville, TN, <sup>2</sup>Vanderbilt Addiction Center, Vanderbilt University, Nashville, TN, <sup>3</sup>Psychology, Vanderbilt University, Nashville, TN
- 122 *Determining the effects of an acute dose of trifluoromethylphenylpiperazine on the human reward pathway using a gambling task*  
B. R. Russell<sup>1,2</sup>, R. R. Kydd<sup>3,2</sup>, I. J. Kirk<sup>4,2</sup>, L. E. Curley<sup>1,2</sup>, <sup>1</sup>School of Pharmacy, The University of Auckland, Auckland, New Zealand, <sup>2</sup>Centre for Brain Research, The University of Auckland, Auckland, New Zealand, <sup>3</sup>Department of Psychological Medicine, The University of Auckland, Auckland, New Zealand, <sup>4</sup>Department of Psychology, The University of Auckland, Auckland, New Zealand
- 123 *MDMA (Ecstasy) use is associated with increased amygdalar and hippocampal activation during novelty detection*  
P. Mortensen, M. Benningfield, J. U. Blackford, T. J. Watkins, C. R. Di Iorio, R. Cowan, Vanderbilt University, Nashville, TN
- 124 *MDMA (Ecstasy) use is associated with lasting increases in cortical 5-HT<sub>2A</sub> receptors*  
C. R. Di Iorio, R. M. Kessler, M. S. Dietrich, A. Cao, T. J. Watkins, J. U. Blackford, B. P. Rogers, R. Cowan, Vanderbilt University, Nashville, TN
- 125 *Australia drug market in 2010*  
L. Burns, N. Sindicich, National Drug and Alcohol Research Centre, New South Wales, NSW, Australia
- 126 *Web-based survey of psilocybin-occasioned mystical experience*  
K. A. MacLean, J. M. Leoutsakos, M. W. Johnson, R. R. Griffiths, Psychiatry and Behavioral Sciences, Johns Hopkins University, Baltimore, MD

### THEORETICAL, COMMENTARY

- 127 *Confidentiality and integration of substance use disorders treatment with medical care*  
J. L. Sorensen<sup>1,2</sup>, J. Manuel<sup>1,2</sup>, S. Larios<sup>1,2</sup>, H. Newville<sup>1,2</sup>, <sup>1</sup>Psychiatry, University of California, San Francisco, San Francisco, CA, <sup>2</sup>San Francisco General Hospital, San Francisco, CA
- 128 *Recommendations on national drugged driving policies submitted to the Office of National Drug Control Policy*  
R. L. DuPont<sup>1</sup>, B. K. Logan<sup>2</sup>, S. K. Talpins<sup>3,1</sup>, R. B. Voas<sup>4</sup>, <sup>1</sup>Institute for Behavior and Health, Inc., Rockville, MD, <sup>2</sup>Center for Studies of Law in Action, Indiana University, Bloomington, IN, <sup>3</sup>National Partnership on Alcohol Misuse and Crime, Washington, DC, <sup>4</sup>Pacific Institute for Research and Evaluation, Calverton, MD
- 129 *Addressing global drug policy*  
C. B. McCoy, J. Shultz, Epidemiology & Public Health, University of Miami, Miami, FL
- 130 *Update on formulations to deter tampering*  
E. M. Sellers<sup>1,2</sup>, M. K. Romach<sup>1</sup>, K. A. Schoedel<sup>1</sup>, <sup>1</sup>Kendle Early Stage - Toronto, Toronto, ON, Canada, <sup>2</sup>DL Global Partners Inc, Toronto, ON, Canada
- 131 *The role of tamper testing in the assessment of abuse potential*  
R. Fant<sup>1</sup>, E. J. Cone<sup>2</sup>, J. E. Henningfield<sup>1</sup>, <sup>1</sup>Clinical Pharmacology, Pinney Associates, Bethesda, MD, <sup>2</sup>ConeChem Research, Severna Park, MD
- 132 *Risk Evaluation and Mitigation Strategies: New challenges and opportunities for drug abuse investigators*  
S. H. Schnoll, R. V. Fant, M. D. Ertischek, J. E. Henningfield, Risk Management Services, Pinney Associates, Bethesda, MD
- 133 *Tobacco product dependence liability assessment to support the WHO Framework Convention on Tobacco Control*  
J. Henningfield<sup>1,2</sup>, N. Gray<sup>1</sup>, G. Zaatari<sup>1,3</sup>, D. Bettcher<sup>4</sup>, <sup>1</sup>Study Group on Tobacco Product Regulation, WHO, Geneva, Switzerland, <sup>2</sup>Johns Hopkins University, Baltimore, MD, <sup>3</sup>American University of Beirut, Beirut, Lebanon, <sup>4</sup>WHO Tob Free Initiative, Geneva, Switzerland
- 134 *Design considerations for interactive video interventions on mobile devices*  
I. D. Aronson, NDRI, New York, NY
- 135 *Fielding respondent-driven sampling to study veteran reintegration, mental health and substance abuse in the inner city*  
A. S. Bennett, A. Golub, National Development and Research Institutes, Inc., New York, NY
- 136 *Drug use history among patients in substitution therapy in Bucharest, Romania*  
A. O. Abagiu<sup>1,2</sup>, I. C. Fierbinteanu<sup>2</sup>, I. G. Stoica<sup>2</sup>, F. Georgescu<sup>2</sup>, F. Gheorghe<sup>2</sup>, S. C. Popa<sup>2</sup>, E. Cojocaru<sup>2</sup>, V. Leoveanu<sup>1</sup>, A. Koulousas<sup>2</sup>, R. Ianos-Rancovici<sup>2</sup>, E. M. Paris<sup>2</sup>, M. Georgescu<sup>2</sup>, <sup>1</sup>National Institute for Infectious Diseases Prof. Dr Matei Bals, Bucharest, Romania, <sup>2</sup>Romanian Association Against AIDS, Bucharest, Romania
- 137 *Adapting standardized research instruments to match a rural Native American community's experience: Building the base*  
B. Greenfield<sup>1</sup>, D. Lupee<sup>2</sup>, Y. Yamutewa<sup>2</sup>, E. Homer<sup>2</sup>, R. Chavez<sup>1</sup>, R. Currier<sup>3,2</sup>, K. Venner<sup>1</sup>, <sup>1</sup>University of New Mexico Center on Alcoholism, Substance Abuse, and Addictions, Albuquerque, NM, <sup>2</sup>Pueblo of Zuni MICRA Project, Zuni, NM, <sup>3</sup>Zuni Recovery Center, Zuni, NM



- 138 *Models of interorganizational change for implementing EBPs in correction-provider networks*  
M. S. Shafer<sup>1</sup>, D. Duffee<sup>1</sup>, L. Stein<sup>4</sup>, W. Lehman<sup>2</sup>, P. Friedman<sup>3</sup>, M. Prendergrast<sup>6</sup>, P. Noble-Desy<sup>5</sup>, <sup>1</sup>Arizona State University, Phoenix, AZ, <sup>2</sup>Texas Christian University, Ft. Worth, TX, <sup>3</sup>Brown University, Providence, RI, <sup>4</sup>University of Rhode Island, Providence, RI, <sup>5</sup>Washington State Department of Corrections, Tumwater, WA, <sup>6</sup>University of California, Los Angeles, Los Angeles, CA

### OPIOIDS: HUMAN II

- 139 *Prevalence, frequency, correlates and outcomes of benzodiazepine use among patients in methadone maintenance treatment*  
M. Vazirian, A. Khazaeli, M. Chawarski, R. Schottenfeld, Psychiatry, Yale University, New Haven, CT
- 140 *Entry into methadone treatment via interim maintenance: 12-month outcomes*  
R. P. Schwartz<sup>1,2</sup>, J. H. Jaffe<sup>2</sup>, S. M. Kelly<sup>1</sup>, D. Gandhi<sup>2</sup>, K. E. O'Grady<sup>3</sup>, <sup>1</sup>Friends Research Institute, Baltimore, MD, <sup>2</sup>U of MD, Balto, MD, <sup>3</sup>U of MD, College Park, MD
- 141 *Characteristics of newly admitted methadone vs. buprenorphine patients*  
S. G. Mitchell<sup>1</sup>, S. M. Kelly<sup>1</sup>, J. Gryczynski<sup>1</sup>, C. P. Myers<sup>2</sup>, K. E. O'Grady<sup>3</sup>, Y. K. Olsen<sup>4</sup>, R. P. Schwartz<sup>1</sup>, J. H. Jaffe<sup>1</sup>, <sup>1</sup>Friends Research Institute, Baltimore, MD, <sup>2</sup>Patrick Myers Assoc., Baltimore, MD, <sup>3</sup>UMD, College Park, MD, <sup>4</sup>BSAS, Baltimore, MD
- 142 *Variations in outcomes and patient characteristics associated with methadone and buprenorphine dose*  
L. Mooney, M. Hillhouse, C. Thomas, A. Hasson, W. Ling, UCLA, Los Angeles, CA
- 143 *Treatment completion in opioid-dependent pregnant patients randomized to agonist treatment: The role of intravenous drug use*  
M. M. Wilson-Murphy<sup>1</sup>, M. S. Chisolm<sup>1</sup>, J. S. Leoutsakos<sup>1</sup>, K. Kaltenbach<sup>2</sup>, S. H. Heil<sup>3</sup>, P. R. Martin<sup>4</sup>, S. M. Stine<sup>5</sup>, M. Coyle<sup>6</sup>, M. Tuten<sup>1</sup>, H. E. Jones<sup>1</sup>, <sup>1</sup>Johns Hopkins U, Baltimore, MD, <sup>2</sup>Thomas Jefferson U, Philadelphia, PA, <sup>3</sup>U of Vermont, Burlington, VT, <sup>4</sup>Vanderbilt U, Nashville, TN, <sup>5</sup>Wayne State U, Detroit, MI, <sup>6</sup>Brown U, Providence, RI
- 144 *Buprenorphine induction outcomes for heroin and prescription opioid users*  
S. Nielsen, M. Hillhouse, J. Fahey, W. Ling, Integrated Substance Abuse Programs, UCLA, Los Angeles, CA
- 145 *An analysis of counseling sessions attended by opioid-dependent participants in a multicenter trial of buprenorphine/naloxone*  
F. J. Vocci<sup>1</sup>, K. O'Grady<sup>2</sup>, P. Casadonte<sup>3</sup>, W. Ling<sup>4</sup>, P. Fudala<sup>5</sup>, R. Walsh<sup>6</sup>, <sup>1</sup>Friends Research Institute, Baltimore, MD, <sup>2</sup>University of Maryland, College Park, College Park, MD, <sup>3</sup>New York University, New York, NY, <sup>4</sup>UCLA, Los Angeles, CA, <sup>5</sup>Reckitt-Benckiser Pharmaceuticals, Inc, Richmond, VA, <sup>6</sup>NIDA, Rockville, MD
- 146 *Employment-based reinforcement of adherence to depot naltrexone treatment in unemployed opiate-dependent adults: 12-month follow-up*  
M. Koffarnus, J. J. Everly, A. DeFulio, A. Umbricht, M. Fingerhood, G. E. Bigelow, K. Silverman, Psychiatry, Johns Hopkins University School of Medicine, Baltimore, MD
- 147 *Employment-based reinforcement of adherence to oral naltrexone treatment within unemployed injection drug users: 12-month follow-up*  
K. Dunn, A. DeFulio, J. Everly, W. Donlin, A. Umbricht, M. Fingerhood, G. Bigelow, K. Silverman, Johns Hopkins University, Baltimore, MD

- 148 *Contingency management at a MMT clinic in Shanghai, China*  
H. Zhang<sup>1,2</sup>, H. Jiang<sup>3</sup>, J. Du<sup>3</sup>, A. Dong<sup>1</sup>, J. Wang<sup>1</sup>, M. Chawarski<sup>2</sup>, R. Schottenfeld<sup>2</sup>, M. Zhao<sup>3</sup>, Y. Hser<sup>4</sup>, <sup>1</sup>Shanghai Yangpu District Mental Health Center, Shanghai, China, <sup>2</sup>Psychiatry, Yale University, New Haven, CT, <sup>3</sup>Shanghai Mental Health Center, SJTU, Shanghai, China, <sup>4</sup>UCLA ISAP, Los Angeles, CA
- 149 *The feasibility of providing educational counseling for heroin abusers participating in needle-syringe exchange programs in Penang, Malaysia*  
Z. Shamandi<sup>1</sup>, B. Vicknasingam<sup>1</sup>, M. Chawarski<sup>2</sup>, <sup>1</sup>Centre for Drug Research, Universiti Sains Malaysia, Minden, Malaysia, <sup>2</sup>School of Medicine, Yale University, New Haven, CT
- 150 *Comprehension testing of the medication guide for oxycontin*  
L. Sandstrom<sup>1</sup>, P. M. Coplan<sup>1</sup>, L. A. Morris<sup>2</sup>, <sup>1</sup>Risk Management & Epidemiology, Purdue Pharma L.P., Stamford, CT, <sup>2</sup>Louis A. Morris & Assoc, Dix Hills, NY
- 151 *Provider acceptability of automated ancillary services for buprenorphine treatment*  
B. A. Moore<sup>1,2</sup>, T. Fazzino<sup>2</sup>, E. Necrason<sup>3</sup>, B. J. Rounsaville<sup>1</sup>, L. E. Sullivan<sup>1</sup>, D. A. Fiellin<sup>1</sup>, <sup>1</sup>Yale University, New Haven, CT, <sup>2</sup>APT Foundation, New Haven, CT, <sup>3</sup>U. of Hartford, West Hartford, CT
- 152 *Utilization of an automated therapeutic telephone system in primary care buprenorphine*  
T. Fazzino<sup>2</sup>, B. A. Moore<sup>1,2</sup>, <sup>1</sup>Psychiatry, Yale University, New Haven, CT, <sup>2</sup>APT Foundation, New Haven, CT
- 153 *Expanding the continuum of care in opioid agonist treatment using web-based videoconferencing*  
V. L. King, M. Kidorf, J. Peirce, R. Brooner, Psychiatry, Johns Hopkins SOM, Baltimore, MD
- 154 *Developing a computerized sexual risk assessment and feedback tool for use in substance abuse treatment*  
D. A. Calsyn, B. Hartzler, E. A. Wells, K. M. Peavy, Alcohol & Drug Abuse Institute/Psychiatry & Behavioral Sciences, University of Washington, Seattle, WA

### OPIOIDS: ANIMAL

- 155 *Spontaneous withdrawal in opiate-dependent Fischer 344, Lewis and Sprague-Dawley rats*  
J. L. Cobuzzi, A. L. Riley, Psychology, American University, Washington, DC
- 156 *Effects of voluntary exercise on two models of morphine withdrawal*  
R. E. Balter<sup>1</sup>, L. A. Dykstra<sup>1,2</sup>, <sup>1</sup>Curriculum in Neurobiology, University of North Carolina-Chapel Hill, Chapel Hill, NC, <sup>2</sup>Psychology, University of North Carolina, Chapel Hill, Chapel Hill, NC
- 157 *Chronic morphine treatment influences mu- opioid receptor agonist effects on intracranial self-stimulation*  
A. Altarifi, S. S. Negus, Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA
- 158 *Identification of a novel allosteric modulator of opioid receptors: SoRI-25825*  
S. C. Wilson<sup>1</sup>, C. M. Dersch<sup>1</sup>, S. K. Saini<sup>2</sup>, S. Ananthan<sup>2</sup>, R. B. Rothman<sup>1</sup>, <sup>1</sup>Translational Pharmacology Research Section, IRP, NIDA, NIH, Baltimore, MD, <sup>2</sup>Organic Chemistry Department, Southern Research Institute, Birmingham, AL
- 159 *Sigma-1 receptor function is critical for both the discriminative stimulus and aversive effects of the kappa-opioid receptor agonist U-50,488H*  
T. Suzuki, K. Yoshizawa, T. Mori, K. Isotani, K. Torigoe, M. Narita, Toxicology, Hoshi Univ. Sch. Pharm. Pharmaceut. Sci., Tokyo, Japan
- 160 *Naloxone-induced taste aversions in opiate-naïve F344 and LEW rat strains*  
A. Desko, J. L. Cobuzzi, A. L. Riley, Psychology, American University, Washington, DC

- 161 *The atypical antidepressant mirtazapine attenuates the expression of morphine-induced place preference*  
S. M. Graves, J. R. Riddle, T. C. Napier, Pharmacology; Center for Compulsive Behaviors and Addictions, Rush University Medical Center, Chicago, IL
- 162 *Dose preference and dose escalation of heroin in extended-access self-administration in Fischer and Lewis rats*  
R. Picetti, A. Ho, M. J. Kreek, The Rockefeller University, New York, NY
- 163 *Regional differences in the role of the VTA on heroin-induced conditioned immunomodulation*  
L. W. Hutson, J. L. Szczytkowski, T. B. Saurer, D. T. Lysle, Psychology, University of North Carolina, Chapel Hill, NC

## INRC POSTERS

### OPIOID PHARMACOLOGY

- 164 *In vivo modulation of the behavioral effects of the kappa-opioid hallucinogen salvinorin A by P-glycoprotein ligands*  
E.R. Butelman (1), S. Rus (1), K. Lovell (2), T.E. Prisinzano (2), M.J. Kreek (1). (1) The Rockefeller Univ., New York, NY, (2) Dept. of Medicinal Chemistry, Univ. of Kansas, Lawrence, KS, USA
- 165 *Role of dynorphin/kappa opioid receptor in forced swim test behavior in rats*  
N.Z. Fang, Y. Zhou, S. Chen, B. Mayer-Blackwell, B. Reed, M.J. Kreek. Lab. of the Biology of Addictive Diseases, Rockefeller Univ., New York, NY, USA
- 166 *Differential KOR agonist-induced activation of ERK1/2 MAP kinase mediates paradoxical potentiation of cocaine-conditioned place preference*  
J.P. McLaughlin (1,2), M.R. Hoot (2), K. Rasakham (1,3). (1) Northeastern Univ., Dept. of Psychology, Boston, MA, (2) Torrey Pines Institute for Molecular Studies, Port St. Lucie, FL, (3) Temple Univ. School of Medicine, Dept. of Pharmacology, Philadelphia, PA, USA
- 167 *Pharmacological profile of delta and kappa opioid receptor subtypes in spinal cord*  
R.M. van Rijn, D.I. Brissett, J.L. Whistler. Ernest Gallo Clinic and Research Center, Dept. of Neurology, Univ. of California San Francisco, CA, USA
- 168 *Morphine-induced motor stimulation after repeated administration: Age-related differences in mice*  
W. Koek. Dept. of Psychiatry and Pharmacology, Univ. of Texas Health Science Center at San Antonio, TX, USA
- 169 *Pharmacokinetic interaction and safety of naltrexone hydrochloride co-administered with oral opioids*  
N. Levy-Cooperman (1), B. Setnik (2), N.L. Chen (1), B. Chakraborty (1), K. Schoedel (1), M.K. Romach (1), E.M. Sellers (1), K. Sommerville (2), V. Goli (2,3). (1) Kendle Early Stage, Toronto, Canada, (2) King Pharmaceuticals Inc., Cary, NC, (3) Duke Univ. Medical Center, Durham, NC, USA
- 170 *The kinetics of priming-induced functional competence of delta opioid receptors*  
L. Scarlota, M. Rowan, K. Berg, W. Clarke. Dept. of Pharm., Univ. of Texas Health Sci. Center, San Antonio, TX, USA
- 171 *Orphanin FQ/Nociceptin activates Oct-2 in SH-SY5Y human neuroblastoma cells*  
C.L. Donica (1), K.M. Standifer (2). (1) OK Center for Neuroscience, (2) Dept of Pharmaceutical Sciences, OUHSC, Oklahoma City, OK, USA

- 172 *The novel opioid antagonist, ALKS 37, reduces morphine-induced slowing of gastrointestinal transit in rodents and hydrocodone-induced slowing in dogs*  
M.S. Todtenkopf (1), R.L. Dean (1), D. Arnelle (1), K.A. Heang (1), K.S. O'Neill (1), J.M. Bidlack (2), B.I. Knapp (2), D.R. Deaver (1). (1) Life Sciences and Toxicology Dept, Alkermes, Inc., Waltham, MA, (2)Dept of Pharmacology and Physiology, School of Med. and Dent., Univ. of Rochester, Rochester, NY, USA
- 173 *Suppression of malignancy of gefitinib-resistant human non-small-cell lung cancer (NSCLC) cells by activation of d-opioidergic system*  
N. Kuzumaki (1), A. Suzuki (1), M. T-Narita (1), K. Yamamizu (2), A. Nagasawa (1), Y. Okada (3), H.J. Okano (3), H. Okano (3), J.K. Yamashita (2), T. Suzuki (1), M. Narita (1). (1) Dept. Toxicol., Hoshi Univ. Sch. Pharm. Pharmaceut. Sci., Tokyo, (2) Lab. Stem cell Differentiation, Stem Cell Research Center, Institute for Frontier Med. Sci., Kyoto Univ., Kyoto, (3) Dept. Physiol., Keio Univ. Sch. Med., Tokyo, Japan
- 174 *Detection of nor-BNI in mouse brain weeks after administration using LC-MS/MS*  
K.A. Patkar, M.L. Ganno, H.D. Singh, N.C. Ross, J.P. McLaughlin. Torrey Pines Institute for Molecular Studies, Port St. Lucie, FL, USA
- 175 *Using the transitive inference task to study the relational memory deficits associated with withdrawal from chronic nicotine in the C57BL/6 mouse*  
K.A. Cordero, R.C. Cassells, T.J. Gould. Dept. of Psychology, Neuroscience Program, Temple Univ., Philadelphia, PA, USA
- 176 *Social influences on morphine sensitivity in adolescent rodents*  
S. Eitan, S.R. Hofford, S.L. Cole, D.J. Evert, P.J. Wellman. Behavioral and Cellular Neuroscience Program, Dept. of Psychology, Texas A&M University, College Station, TX, USA
- 177 *Effects of morphine on acetic acid-induced suppression of appetitive and reward-related behaviors in mice*  
H. Neelakantan, S.J. Ward, E.A. Walker. Dept. of Pharmaceutical Sciences, Temple Univ. School of Pharmacy, Philadelphia, PA, USA
- 178 *Enkephalinergic system is involved in cocaine-induced behavioral sensitization and the associated increase in AMPA receptor surface expression in nucleus accumbens and caudate putamen*  
B. Mongi Bragato (1), M. A. Assis (1), M. Bartos (1), A. Zimmer (3), L. M. Cancela (1). (1) IFEC-CONICET, Dept. de Farmacología, Facultad de Ciencias Químicas, Universidad Nacional de Córdoba, Córdoba. Argentina, (2) Institute of Molecular Psychiatry, Univ. of Bonn, Bonn, Germany

- 179 *Modulation of behavioral responses to stress by opioid receptor systems*  
K. Sasaki (1, †), M. Shimada (1, †), Y. Kasahara (1), S. Ide (2), H. Komatsu (3), F.S. Hall (4), G.R. Uhl (4), H. Nagase (5), I. Sora (1). (1) Dept. of Biol Psychiat, Grad. Sch. Med., Tohoku Univ., Sendai, (2) Dept. of Pharmacol, Grad. Sch. Pharmaceut. Sci., Hokkaido Univ., Sapporo, (3) Dept. of Psychiat, Grad. Sch. Med., Tohoku Univ., Sendai, Japan, (4) NIDA-IRP, Baltimore, MD., USA, (5) Dept. of Medicinal Chem. Sch. Pharmacy, Kitasato Univ., Tokyo, Japan. †These authors contributed equally to this work.
- 180 *Repeated morphine administration alters contextual learning, synaptic plasticity, and requires phosphorylation of gluR1-containing AMPA receptors in the hippocampus*  
G.S. Portugal, Y. Xia, J. Liu, J.A. Morón Concepcion. Dept. of Anesthesiology, College of Physicians and Surgeons, Columbia Univ. Medical Center, New York, NY, USA
- 181 *The impact of long-term GHB treatment on spatial learning in male rats*  
J. Johansson, A. Grönbladh, F. Nyberg, M. Hallberg. Dept. Pharm. Biosciences, Uppsala Univ., Uppsala, Sweden
- 182 *The superoxide-generating enzyme NADPH oxidase is required for the normal expression of opioid addictive behaviors*  
M. A. Beckerman (1), M. J. Glass (1,2). (1) Dept. of Neurology and Neuroscience, and (2) Graduate Program in Neuroscience, Weill Cornell Medical College, New York, NY, USA

#### OPIOID RECEPTOR REGULATION/SIGNALING

- 183 *Modulation of full-length mu opioid receptor (MOR-1) expression and function by truncated proteins with single transmembrane domain of the mu opioid receptor gene, OPRM1*  
J. Xu (1), M. Xu (1), G.C. Rossi (2), C.E. Inturrisi (3), G.W. Pasternak (1), Y.-X. Pan (1). (1) Dept. of Neurology, Memorial Sloan-Kettering Cancer Center, New York, NY, (2) Dept. of Psychology, CW Post College, Long Island Univ., Brookville, NY, (3) Dept. of Pharmacology, Weill Medical College of Cornell Univ., New York, NY, USA
- 184 *OPRM1 A118G SNP reduces MORPR expression in some, but not all, brain regions in a mouse model*  
Y-J. Wang (1), P. Huang (1), A. Ung (1), J. Blendy (2), L-Y. Liu-Chen (1). (1) Dept. Pharmacol., Temple Univ. School of Medicine, (2) Dept. Pharmacol., Univ of Pennsylvania, Philadelphia, PA, USA
- 185 *Selective interaction of G-protein coupled receptors with isoforms of ADP-ribosylation factor (ARF)*  
T. Koch, M. Rankovic, J. Konietzko, E. Kahl, V. Höllt. Dept. of Pharmacology and Toxicology, Otto-von-Guericke-Univ., Magdeburg, Germany
- 186 *Role of Galphao protein in opioid agonist-dependent signaling and behavior*  
J. Lamberts (1), E. Jutkiewicz (1,2), J. Traynor (1,2). (1) Dept. of Pharmacology and (2) Substance Abuse Research Center, Univ. of Michigan, Ann Arbor, MI, USA

- 187 *DOR-KOR heteromer signaling in peripheral sensory neurons*  
B.A. McGuire, W.P. Clarke, K.A. Berg. Department of Pharmacology, University of Texas Health Science Center, San Antonio, TX, USA
- 188 *Both JNK and  $\beta$ -arrestin 2 play a role in ligand dependent signaling of the mu opioid receptor*  
N. Mittal (1,2), M. Tan (1), O. Egbuta (1), N. Desai (1), C. Crawford (2), T. Xie (1), C. Evans (1), W. Walwyn (1). (1) Dept. Psychiatry & Biobehavioral Sciences, Stefan Hatots Ctr Neuropharmacol., Semel Institute, UCLA, CA, (2) Dept of Psychology, California State Univ., San Bernardino, CA, USA
- 189 *Mu- and delta-opioid receptor agonists mediate up-regulation of RGS19 protein in SH-SY5Y cells*  
Q. Wang, J.R. Traynor. Dept. of Pharmacology and Substance Abuse Research Center, Univ. of Michigan, Ann Arbor, MI, USA

### GENETICS

- 190 *Csnk1e is a genetic regulator of sensitivity to psychostimulants and opioids*  
C.D. Bryant (1), L. Zhou (3,4), C. Olker (3,4), M.H. Vitaterna (3,4), F.W. Turek (3,4), A.A. Palmer (1,2). (1) Dept. of Human Genetics, (2) Dept. of Psychiatry and Behavioral Neuroscience, Univ. of Chicago, Chicago, IL, (3) Center for Sleep and Circadian Biology, (4) Dept. of Neurobiology and Physiology, Northwestern Univ., Evanston, IL, USA
- 191 *Effects of A118G polymorphism and personality factors on HPA-axis response to metyrapone in normal volunteers*  
E. Ducat, B. Ray, M. Randesi, A. Ho, M.J. Kreek. Lab. of Biology of Addictive Disease, Rockefeller Univ., New York, NY, USA
- 192 *Pharmacogenetics of methadone dose requirement in opioid addiction treatment*  
O. Levran (1), E. Peles (2), S. Hamon (1), M. Randesi (1), M. Adelson (2), M.J. Kreek(1). (1) Lab. of Biology of Addictive Diseases, Rockefeller Univ., New York, NY, USA, (2) Dr. Miriam and Sheldon G. Adelson Clinic for Drug Abuse, Treatment and Research, Elias Sourasky Medical Center, Tel Aviv, Israel
- 193 *A naturally occurring genetic model of human mu-opioid receptor genetic variation*  
E.J. Vallender, Z. Xie, D.M. Platt, G.M. Miller. Div. of Neuroscience, New England Primate Research Center, Harvard Medical School, Southborough, MA, USA
- 194 *Epigenetic mechanism of prodynorphin upregulation in the brain of human alcoholics: Dependence on promoter methylation and USF2 transcription factor*  
T. Yakovleva, I. Bazov, M.M.H. Taqi, H. Watanabe, O. Kononenko, G. Bakalkin, Dept. Pharmaceutical Biosciences, Uppsala Univ., Uppsala, Sweden



### PAIN AND ANALGESIA

- 195 *Using an operant orofacial assay to measure the analgesic effects of morphine and the hyperalgesic effects of withdrawal*  
E.M. Anderson (2), R.M. Caudle (1,2). (1) Dept. of Oral Surgery, (2) Dept. of Neuroscience, Univ. of Florida, College of Medicine, Gainesville, FL, USA
- 196 *Activation of spinal mu and delta opioid receptors potently inhibits substance P release induced by peripheral noxious stimuli*  
H. Beaudry, D. Dubois, L. Gendron. Université de Sherbrooke, Québec, Canada
- 197 *Interactions between cortical cannabinoid and opioid receptors during neuropathic pain*  
I. Bushlin, A. Gupta, L.K. Miller, S.D. Stockton Jr., L.A. Devi. Dept. of Pharmacology and Systems Therapeutics, Mount Sinai School of Medicine, New York, NY, USA
- 198 *Morphine-induced hyperalgesia is associated with AMPAR trafficking in the dorsal horn of the spinal cord*  
D. Cabañero (1), Y. Xia (1), A. Baker (2), S. Zhou (2), S. M. Carlton (2), J. Morón-Concepción (1). (1) Anesthesiol. Dept., Columbia Univ. Med. Center, New York, NY, (2) Dept. of Neurosci. and Cell Bio., UTMB, Galveston, TX, USA
- 199 *Antinociceptive effects of NOP receptor agonists, nociceptin, Ro 64-6198 and (+)-5a compound, given by intra-periaqueductal gray injection*  
L.-C. Chiou (1,2,3,4), H.-J. Lee (1,3), Y.-Y. Liao (2). (1) Dept. Pharmacology, Coll. Medicine, (2) Grad. Inst. Pharmacology, (3) Zoology, National Taiwan Univ., Taipei, Taiwan
- 200 *Antinociception of perineurally applied drugs via modulation of tight junction proteins in the perineurium*  
D. Hackel (1,2), S. Amasheh (4), S. Krug (4), S.A. Mousa (3), E.J. Wrede (1), M. Fromm (4), A. Brack (2), H.L. Rittner (2). (1) Dept of Anaesthesiology, CBF, Charité–Berlin, (2) Dept. of Anaesthesiology, Univ. Hospital of Würzburg, (3) Dept. of Anesthesiology, CCV, Charité–Berlin, (4) Institute of Clinical Physiology, CBF, Charité–Berlin, Germany
- 201 *Analysis of antinociceptive efficacy following microinjection of mu-opioid receptor agonists into the periaqueductal gray of the rat*  
R.A. Haseman, E.N. Bobeck, S.L. Ingram, M.M. Morgan. Washington State Univ. Vancouver, Vancouver, WA, USA
- 202 *Pharmacological functional magnetic resonance imaging analysis for pain research with understanding the mechanisms within the brain that provoke pain*  
H. Horiuchi (1), K. Niikura (1,2), Y. Takemura (1,3), A. Yamashita (1), K. Torigoe (1), S. Imai (1), N. Kuzumaki (1), M. Yamazaki (3), T. Suzuki (1), M. Narita (1,3). (1) Dept. Toxicol., Sch. Pharm. Pharmaceut. Sci., Hoshi Univ., Tokyo, Japan, (2) Lab. Biol. of Addict. Dis., Rockefeller Univ., NY, USA, (3) Dept. Anesthesiol., Grad. Sch. Med. Pharmaceut. Sci. Res., Toyama Univ., Toyama, Japan



- 203 *Opioid withdrawal-induced hyperalgesia is mediated in the peripheral nervous system via Transient Receptor Potential Vanilloid 1 (TRPV1)*  
J.A. Jira (1), V. Spahn (2), O. Fischer (2), C. Zöllner (1). (1) Univ. Hospital Hamburg Eppendorf, Center for Anaesthesiology and Intensive Care Medicine, Hamburg, (2) Charité Berlin, CBF, Dept. of Anesthesiology and Operative Intensive Care Medicine, Berlin, Germany
- 204 *Remifentanyl exposure produces prolonged hyperalgesia under certain pain conditions but not morphine tolerance in rats*  
E.M. Jutkiewicz, Y.Sun, J.S. Schimmel, J.R. Traynor. Dept. of Pharmacology and Substance Abuse Research Center, Univ. of Michigan Medical School, Ann Arbor, MI, USA
- 205 *Nicotine prevents neuropathic pain following peripheral nerve injury through the suppression of neuroinflammation.*  
S. Kishioka, N. Kiguchi, Y. Kobayashi, S. Tominaga, J. Nakamura, T. Maeda, Dept. of Pharmacology, Wakayama Medical Univ., Wakayama City, Japan
- 206 *Stimulation of the brain reward system attenuates the analgesic effects of the NMDA antagonist LY235959*  
C.M. Knapp (1), L. Tozier (1,2), S. Tapan (1), C. Kornetsky (1,2). (1) Division of Psychiatry, (2) Dept of Pharmacology, Boston Univ. School of Medicine, Boston MA, USA
- 207  *$\mu$ -Opioid control of P2X3 receptors in DRG sensory neurons of rat is crucially dependent on the experimental in vitro conditions*  
O. Krishtal (1), I. Chizhmakov (1), V. Kulyk (1), D. Simone (2), G. Bakalkin (3). (1) Dept. of Cell. Membranol., Bogomoletz Institute of Physiol., Kiev, Ukraine, (2) School of Dentistry, Univ. Minnesota, Minneapolis, MN, USA, (3) Dept. of Pharm. Biosci., Uppsala Univ., Uppsala, Sweden
- 208 *Truncated MOR-1 splice variants: Targets for potent opioid analgesics lacking side-effects*  
S. Majumdar (1), S.G. Grinnell (1), V. Le Rouzic (1), M. Burgman (1), L. Polikar (1), M. Ansonoff (2), Y. Xiang Pan (1), J. E. Pintar (2), G. W. Pasternak (1). (1) Lab. of Molecular Pharmacology and Chemistry, Memorial Sloan-Kettering Cancer Center, New York, NY, (2) Dept. of Cell Biology and Neuroscience, Univ. of Medicine and Dentistry of New Jersey, Piscataway, NJ, USA
- 209 *Morphine resistance and its underlying mechanisms in an experimental mouse model of fibromyalgia*  
T. Mukae, M. Nishiyori, K. Araki, H. Ueda. Div. of Molecular Pharmacology and Neuroscience, Nagasaki Univ. Graduate School of Biomedical Sciences, Nagasaki, Japan

- 210 *HDAC inhibitors recover the epigenetically silenced mu-opioid receptor expression in neuropathic pain model*  
H. Ueda, H. Uchida, K. Araki. Div. of Molecular Pharmacology and Neuroscience, Nagasaki Univ. Graduate School of Biomedical Sciences, Nagasaki, Japan
- 211 *Involvement of long-chain fatty acid receptors, GPR40 and GPR120, in the induction of antinociception of docosahexaenoic acid*  
K. Nakamoto (1), T. Nishinaka (1), K. Matsumoto (1), M. Mankura (2), S. Tokuyama (1). (1) Dept. of Clinical Pharmacy, School of Pharmaceutical Sciences, Kobe Gakuin Univ., Japan, (2) Ikeda Tohka Industries Co., Ltd., Japan
- 212 *Different  $\mu$ -opioid receptor activation profiles of oxycodone and morphine at specific brain regions in mouse femur bone cancer pain model*  
A. Nakamura (1,2), M. Hasegawa (1), T. Katayama (1), T. Tomii (1), K. Minami (1), A. Nishiyori (1), M. Narita (2), T. Suzuki (2), G. Sakaguchi (1), A. Kato (1). (1) Pain & Neurology, Discovery Research Lab., SHIONOGI Co., Ltd., Shiga, (2)Dept. of Toxicology, Hoshi Univ. School of Pharmacy and Pharmaceutical Sciences, Tokyo, Japan
- 213 *Possible change in microRNAs associated with mesolimbic motivation/valuation circuitry under neuropathic pain*  
M. Narita, S. Imai, M. Saeki, M. Yanase, H. Horiuchi, M. Abe, M.T-Narita, N. Kuzumaki, T. Suzuki. Dept. Toxicol. Sch. Pharm. Pharmaceut. Sci., Hoshi Univ., Tokyo, Japan
- 214 *Effects of dextromethorphan/morphine on treatment of neuropathic pain in mice*  
P.-L. Tao (1,2), P.-H. Lee (2), E. Y.-K. Huang (2). (1) Div. of Mental Health and Addic. Med., Inst. of Popul. Health Sci., Natl. Health Res. Inst., (2) Dept. of Pharmacol., Natl. Def. Med. Ctr., Taipei, Taiwan
- 215 *Sleep disturbances in a neuropathic pain-like condition are associated with altered GABAergic transmission in the cingulate cortex*  
A. Yamashita (1), S. Imai (1), H. Horiuchi (1), K. Niikura (1,2), M. T-Narita (1), N. Kuzumaki (1), T. Suzuki (1), M. Narita (1). (1) Dept. Toxicol. Sch. Pharm. Pharmaceut. Sci., Hoshi Univ., Tokyo, Japan, (2) Lab. Biol. of Addict. Dis., Rockefeller Univ., New York, NY, USA
- 216 *Investigation on DNA methylation status of opioid peptides promoters in PBMCs of subjects with bipolar disorder*  
C. D'Addario (1,4), M. Di Benedetto (1), B. Dell'Osso (2), S. Bastias Candia (1), F. Cortini (3), D. Galimberti (3), E. Scarpini (3), S. Candeletti (1), M. Maccarrone (4), A.C. Altamura (2), P. Romualdi (1). (1) Dept. of Pharmacology, Univ. of Bologna, Bologna, (2) Dept. of Psychiatry, (3) Dept. of Neurological Sciences, Univ. of Milan, Milano, (4) Dept. of Biomedical Sciences, Univ. of Teramo, Teramo, Italy
- 217 *Opioids block the effects of the HIV entry inhibitors maraviroc and AMD-3100 in CNS glia*  
N. El-Hage, S.M. Dever, T. Ahmed, Y. Zhang, K.F. Hauser, Department of Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA, USA

## **INRC Symposium 4**

**Diplomat 1-2  
9:30 - 11:30 AM**

### **THERAPEUTIC POTENTIAL OF NOCICEPTIN RECEPTOR LIGANDS**

Chairs: Claes Wahlestedt and Lawrence Toll

- 9:30 *To mix or not to mix: Modulation of opioid activity by nociceptin receptor ligands*  
Nurulain Zaveri, Astraea Therapeutics, USA
- 10:00 *Therapeutic potential of NOP ligands as spinal analgesics*  
Holden Ko, University of Michigan, USA
- 10:30 *The nociceptin/orphanin FQ system as a treatment target for addiction*  
Roberto Ciccocioppo, University of Camerino, Italy
- 11:00 *Discovery and development of nociceptin receptor agonists in alcohol dependence*  
Shaun Brothers, University of Miami Miller School of Medicine, USA

## **Symposium XI**

**Regency 3  
9:30 - 11:30 AM**

### **RETHINKING THE EFFECTS OF METHAMPHETAMINES**

Chairs: Hedy Kober and Matthew G. Kirkpatrick

- 9:30 *Cognitive regulation of craving in methamphetamine users*  
Hedy Kober, Yale University, New Haven, CT
- 9:55 *Top down control and aggression in methamphetamine users*  
Edythe London, University of California, Los Angeles, Los Angeles, CA
- 10:20 *Acute cognitive effects of methamphetamine in humans*  
Matthew Kirkpatrick, Psychiatry, University of Chicago, Chicago, IL
- 10:45 *Mechanism of methamphetamine action and behavior: Are we looking at the correct behaviors?*  
John Mendelson, California Pacific Medical Center Research Institute, St. Luke's Hospital,  
San Francisco, CA
- 11:10 *Discussant*  
Carl L. Hart, Columbia University, New York, NY

## **Oral Communications 18**

**Regency 1  
9:30 - 10:30 AM**

### **ENVIRONMENT AND BEHAVIOR: TAKING DRUGS IN CONTEXT**

Chairs: Mark A. Smith and Michelle Baladi

- 9:30 *Eating a high fat chow differentially affects sensitivity of adolescent male and female rats to cocaine-induced locomotor activity*  
M. Baladi<sup>1</sup>, C. P. France<sup>1,2</sup>, <sup>1</sup>Pharmacology, University of Texas Health Science Center, San Antonio, TX, <sup>2</sup>Psychiatry, University of Texas Health Science Center, San Antonio, TX
- 9:45 *Time of day influences voluntary intake and behavioral response to drug and food reward*  
D. R. Keith, C. L. Hart, R. Silver, Columbia University, New York, NY
- 10:00 *Aerobic exercise decreases the acquisition of cocaine self-administration*  
M. A. Smith, E. G. Pitts, Psychology, Davidson College, Davidson, NC

10:15 *Exercise as a novel approach to methamphetamine treatment*

J. Chudzynski<sup>1</sup>, R. Rawson<sup>1</sup>, J. Penate<sup>1</sup>, B. Dolezal<sup>2,1</sup>, D. Dickerson<sup>1</sup>, C. Cooper<sup>1</sup>, L. Mooney<sup>1</sup>,  
<sup>1</sup>Integrated Substance Abuse Programs, UCLA, Los Angeles, CA, <sup>2</sup>Exercise Physiology  
Research Laboratory, UCLA, Los Angeles, CA

### Symposium XII

**Regency 1**  
**10:45 - 11:45 AM**

#### **SOCIAL ENVIRONMENT AND DRUG-SEEKING: NEUROBIOLOGICAL FACTORS**

Chairs: Linda Dykstra and Mark A. Smith

10:45 *Social context attenuates brain and HPA axis activation that occurs in response to drug and drug cues*

Janet Neisewander, Arizona State University, Tempe, AZ

11:05 *Neurocircuitry of social stress and cocaine self-administration*

Klaus Miczek, Tufts University, Medford, MD

11:25 *Molecular mechanisms of environmental enrichment*

Tom Green, University of Texas Medical Branch, Galveston, TX

### Symposium XIII

**Diplomat 4-5**  
**9:30 - 10:30 AM**

#### **NEUROCOGNITIVE DYSFUNCTION IN ADDICTION: MECHANISMS AND INTERVENTIONS**

Chairs: Warren K. Bickel and Will M. Aklin

9:30 *Modeling executive function in reinforcement learning: Implications of situation representations for addiction and treatment*

A. David Redish, University of Minnesota, Minneapolis, MN

9:50 *Targeting memory processes in addiction: Effects of beta-blockers on cravings in response to drug-cued memories*

Efrat Aharonovich, Columbia University, New York, NY

10:10 *Executive function therapy for addiction*

Warren Bickel, University of Arkansas for Medical Sciences, Little Rock, AR

### Symposium XIV

**Diplomat 4-5**  
**10:45 - 11:45 AM**

#### **BRAIN IMAGING AS A TOOL FOR TREATMENT DEVELOPMENT IN STIMULANT ABUSE**

Chair: F. Gerard Moeller

10:45 *PharmacofMRI as a tool for medication development in cocaine dependence*

F. Gerard Moeller, University of Texas Health Science Center at Houston, Houston, TX

11:05 *White matter damage in experimental cocaine abuse: DTI studies*

Ponnada A. Narayana, University of Texas Health Science Center at Houston, Houston, TX

- 11:25 *Nonhuman primate proton MRS studies of chronic cocaine's effects: A model to study novel treatments for cocaine-induced glutamatergic abnormalities*  
Marc J. Kaufman, Brain Imaging Center, McLean Hospital/Harvard Medical School,  
Belmont, MD

### **BRUNCH WITH CHAMPIONS** (Pre-Registrants Only)

**Room 312**  
**11:30 AM - 1:00 PM**

### **INRC Lunch Break** (Lunch on your own)

**11:30 AM - 1:00 PM**

### **INRC Symposium 5**

**Diplomat 1-2**  
**1:00 - 3:00 PM**

#### **SEX DIFFERENCES IN PAIN AND OPIOID ANALGESIA**

Chairs: Vishnudutt Purohit and Cora Lee Wetherington

- 1:00 *Gender differences in pain*  
Linda LeResche, University of Washington, USA
- 1:30 *Opioid analgesia and sex differences: An overview*  
Elise Y. Sarton, University Medical Center, The Netherlands, Leiden, United Kingdom
- 2:00 *Impact of age and sex in the antihyperalgesic actions of morphine: Role of periaqueductal gray*  
Anne Z. Murphy, Georgia State University, USA
- 2:30 *The importance of sex in pain: Sexual dimorphic expression in spinal cord of mu-opioid and kappa-opioid receptor heterodimers*  
Alan Gintzler, State University of New York Downstate Medical Center, USA

### **Oral Communications 19**

**Regency 3**  
**1:00 - 3:00 PM**

#### **NICOTINE IN NON-HUMANS**

Chairs: Dustin J. Stairs and Natalie A. Peartree

- 1:00 *Behavioral, biochemical, and molecular indices of nicotine withdrawal: Differential impact of sex on stress-related markers*  
O. V. Torres, L. A. Natividad, A. K. Muñiz, L. E. O'Dell, Psychology, University of Texas at El Paso, El Paso, TX
- 1:15  *$\beta$ -Carbolines found in cigarette smoke suppress monoamine metabolism in mouse brain*  
G. F. Marrone<sup>1</sup>, S. J. Heishman<sup>1</sup>, R. B. Rothman<sup>1</sup>, S. F. Ali<sup>2</sup>, M. H. Baumann<sup>1</sup>, <sup>1</sup>Translational Pharmacology Sect., IRP, NIDA, NIH, Baltimore, MD, <sup>2</sup>Dept. of Neurochemistry, NCTR, FDA, Jefferson, AR
- 1:30 *Nicotinic  $\alpha 4\beta 2$  receptors and the discriminative stimulus effects of nicotinic receptor agonists in rhesus monkeys*  
C. S. Cunningham, L. R. McMahon, Pharmacology, UTHSCSA, San Antonio, TX

- 1:45 *Effects of environmental enrichment on the locomotor stimulant effects of repeated nicotine pretreatment and the relationship with brain nicotinic acetylcholine receptor densities in rats*  
D. J. Stairs<sup>1</sup>, C. S. Bockman<sup>2</sup>, L. A. Hasselquist<sup>1</sup>, T. Hickie<sup>1</sup>, <sup>1</sup>Department of Psychology, Creighton University, Omaha, NE, <sup>2</sup>Department of Pharmacology, Creighton University, Omaha, NE
- 2:00 *Caffeine and its interaction with nicotine-associated cues in the persistence and reinstatement of nicotine-seeking behavior in rats*  
X. Liu, Psychiatry and Human Behavior, University of Mississippi Medical Center, Jackson, MS
- 2:15 *The influence of social interactions and nicotine on corticosterone and behavioral responses in female and male adolescent rats*  
N. A. Peartree<sup>1</sup>, N. S. Pentkowski<sup>1,2</sup>, M. R. Painter<sup>1</sup>, T. H. Cheung<sup>2</sup>, K. J. Thiel<sup>1</sup>, J. L. Neisewander<sup>2</sup>, <sup>1</sup>School of Life Sciences, Arizona State University, Scottsdale, AZ, <sup>2</sup>Psychology, Arizona State University, Tempe, AZ
- 2:30 *Calcium signaling underlying nicotine's suppressive effect on TLR3 and TLR4 pathways*  
W. Y. Cui<sup>1</sup>, J. Wang<sup>2</sup>, R. Polanowska-Grabow<sup>3</sup>, J. Saucerman<sup>3</sup>, J. Gu<sup>1</sup>, S. Chang<sup>4</sup>, M. D. Li<sup>2</sup>, <sup>1</sup>Life Science, Peking University, Beijing, China, <sup>2</sup>Psychiatry and Neurobehavioral Sciences, University of Virginia, Charlottesville, VA, <sup>3</sup>Biomedical Engineering, University of Virginia, Charlottesville, VA, <sup>4</sup>NeuroImmune Pharmacology, Seton Hall University, South Orange, NJ
- 2:45 *Nicotine inhibits estrogen signaling and increases post-ischemic hippocampal damage in female rats*  
A. P. Raval, Neurology, University of Miami, Miami, FL

## Oral Communications 20

**Regency 1**  
**12:45 - 1:45 PM**

### IMMUNE FUNCTION: FIGHTING OFF DRUGS

Chairs: Jay P. McLaughlin and Frances D. Valencia

- 12:45 *HIV-1 gp120 induces the expression of the transcription factor NF-E2-related factor 2 in astrocytes*  
V. B. Pichili, T. Samikkannu, N. Gandhi, Z. M. Saiyed, M. Agudelo, P. Khatavkar, A. Yndart, M. P. Nair, Department of Immunology, Institute of NeuroImmune Pharmacology, Florida International University, Miami, FL
- 1:00 *HIV-1 Tat protein expression in mouse brain impairs learning and memory performance but potentiates the behavioral psychostimulant effects of cocaine*  
J. P. McLaughlin, S. M. Gomes, E. I. Sypek, C. F. Shay, A. N. Carey, Torrey Pines Institute for Molecular Studies, Port St. Lucie, FL
- 1:15 *The impact of methamphetamine use on outcomes in herpes simplex virus type 2 disease and immune response*  
F. D. Valencia, G. N. Milligan, K. A. Cunningham, N. Bourne, University of Texas Medical Branch, Galveston, TX
- 1:30 *Cannabinoids inhibit T-cells in an in vitro assay for graft rejection, the mixed lymphocyte reaction*  
R. R. Hartzell<sup>1,2</sup>, J. J. Meissler<sup>1,2</sup>, M. W. Adler<sup>1</sup>, T. K. Eisenstein<sup>1,2</sup>, <sup>1</sup>Center for Substance Abuse Research, Temple University, Philadelphia, PA, <sup>2</sup>Microbiology and Immunology, Temple University, Philadelphia, PA

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**Thursday, June 23, 2011**

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## **Oral Communications 21**

**Regency 1  
2:00 - 3:00 PM**

### **COMING TO TERMS WITH DRUG ABUSE: CRIMINAL JUSTICE**

Chairs: Gerald Stahler and Catina C. O'Leary

- 2:00 *Enhancing substance abuse treatment for women in drug court*  
N. P. Messina, UCLA Integrated Substance Abuse Programs, Los Angeles, CA
- 2:15 *Four- and eight-month outcomes from a randomized peer-partnered case management intervention among community-recruited female offenders*  
C. C. O'Leary, S. E. Bradford, C. L. Striley, L. B. Cottler, Psychiatry, Washington University School of Medicine, Saint Louis, MO
- 2:30 *Level of crime predicts differential mortality risk prior to opioid maintenance treatment*  
T. Clausen, A. Bukten, Norwegian Centre for Addiction Research, University of Oslo, Oslo, Norway
- 2:45 *The prevalence of HIV risk behaviors among felony drug court clients*  
K. L. Dugosh<sup>1</sup>, D. S. Festinger<sup>1,3</sup>, D. S. Metzger<sup>1,3</sup>, D. B. Marlowe<sup>1,2,3</sup>, <sup>1</sup>Treatment Research Institute, Philadelphia, PA, <sup>2</sup>National Association of Drug Court Professionals, Alexandria, VA, <sup>3</sup>Department of Psychiatry, University of Pennsylvania, Philadelphia, PA

## **CPDD SWEEPSTAKES DRAWING**

**Regency 3  
3:00 - 3:15 PM**

***YOU MUST BE SEATED IN ONE OF THE AFTERNOON SESSIONS  
IN ORDER TO HAVE YOUR BADGE COLLECTED***

END OF CPDD PROGRAM

HAVE A SAFE TRIP HOME!

**SEE YOU IN LA QUINTA, CALIFORNIA, JUNE 9-15, 2012**

INRC Program Continues....

***BADGES MUST BE WORN FOR ALL SESSIONS AND SOCIAL EVENTS***

### INRC ORAL SESSION

Diplomat 1

3:15 PM – 5:15 PM

Chair: Craig Stevens, Ph.D., Oklahoma State Univ College of Osteopathic Med, USA

- 3:15-3:30     *Regulation of opioid dependence by let-7 microRNAs*  
Y. He and Z. Wang, Dept. of Biopharmaceutical Sciences, Cancer Center, & Program for Collaborative Research in the Pharmaceutical Sciences, Univ. of Illinois, Chicago, IL, USA
- 3:30-3:45     *Mu opioid receptor biased ligands: Delivering powerful analgesia and minimizing side effects*  
S.M. DeWire, D. Yamashita, C.J. LaBuda, M.W. Lark, and J.D. Violin, Trevena Inc., King of Prussia, PA, USA
- 3:45-4:00     *Deciphering mu-opioid receptor phosphorylation & dephosphorylation*  
C. Doll, F. Pöll, S. Schulz, Institute of Pharmacology and Toxicology, Univ. Hospital, Friedrich Schiller Univ. Jena, Germany
- 4:00-4:15     *Differential binding of non-visual arrestins to the intracellular domains of the mu-opioid receptor*  
K. Saxena, Y.-J. Chen, I. Rodriguez-Martin, V. Gurevich, J. Benovic, G. Henderson, E. Kelly, School of Physiology and Pharmacology, Univ. of Bristol, Bristol, UK, Dept. of Pharmacology, Vanderbilt Univ. School of Medicine, Nashville, TN, , Dept. of Biochemistry and Molecular Biology, Thomas Jefferson Univ., Philadelphia, PA, USA
- 4:15-4:30     *Bivalent ligand MDAN-21 blocks receptor endocytosis by bridging mu-delta opioid heteromers*  
A.S. Yekkirala (1,2), A.E. Kalyuzhny (3), P.S. Portoghese (1,2,3), (1) Dept. of Medicinal Chemistry, College of Pharmacy, (2) Dept. of Pharmacology, (3) Dept. of Neuroscience, Medical School., Univ. of Minnesota, Minneapolis, MN, USA
- 4:30-4:45     *Changes in ligand-biased signaling are associated with opioid tolerance*  
E.N. Bobeck (1), T.A. Macey (2), K.L. Suchland (1), M.M. Morgan (1), S.L. Ingram (1), (1) Dept. of Psychology, WSU Vancouver, Vancouver, WA, (2) VA Hospital, Oregon Health and Science Univ., Portland OR, USA
- 4:45-5:00     *RGS9 knockout enhances MOR-mediated inhibition of adenylyl cyclase in a CNS region-dependent manner*  
D.E. Selley (1), V. Zachariou (3), M.P. Cassidy (1), C.K. Chen (2), E.J. Nestler (4) and L.J. Sim-Selley(1), (1) Dept. of Pharmacology & Toxicology and (2) Biochemistry and Molecular Biology, Virginia Commonwealth Univ., Richmond, VA, USA, (3) Dept. of



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## Thursday, June 23, 2011

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Pharmacology, Univ. of Crete, Faculty of Medicine, Heraklion, Crete, Greece, (4) Fishberg Dept. of Neuroscience, Mount Sinai School of Medicine, New York, NY, USA

5:00-5:15     *Mouse strain-specific analgesic responses in MOR-1 and DOR-1 KO mice*

J. Pinter, M. Ansonoff, T. Wen, J. Nitsche, Dept. Neuroscience and Cell Biology, UMDNJ-RWJMS, Piscataway, NJ, USA

INRC BUSINESS MEETING

Diplomat 1

5:15 PM – 6:30 PM

INRC DATA BLITZ

Diplomat 1

8:00 PM – 10:00 PM

*BADGES MUST BE WORN FOR ALL SESSIONS AND SOCIAL EVENTS*

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## Friday, June 24, 2011

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### BREAKFAST

Great Hall 2  
7:30 AM – 8:30 AM

### PLENARY SESSION

Great Hall 2  
8:30 AM – 9:30 AM

#### *Transcriptional and Epigenetic Mechanisms of Drug Addiction*

Eric Nestler, Director, Brain Institute; Mount Sinai School of Medicine, New York, NY USA

### INRC Symposium 6

Great Hall 2  
9:45 AM-11:50 AM

#### GENETIC MOUSE MODELS FOR THE OPIOID SYSTEM

Chair: Brigitte Kieffer, Institut de Génétique et de Biologie Moléculaire et Cellulaire Parc d'innovation, France

- 9:45-10:10      *Functional characterization of the OPRM1 A112G SNP in mice*  
Julie Blendy, University of Pennsylvania, USA
- 10:10-10:35    *The role of OPRM1 variation for alcohol reward examined using a reverse translational approach*  
Markus Heilig, NIAAA, USA
- 10:35-11:00    *Direct visualization of delta opioid receptor internalization under physiological conditions*  
Dominique Massotte/Brigitte Kieffer, Institut de Génétique et de Biologie Moléculaire et Cellulaire, France
- 11:00-11:25    *Opioids induced cellular and behavioral changes in MOPr phosphorylation-deficient (PD) mice*  
Jia Bei Wang, University of Maryland, USA
- 11:25-11:50    *Dynorphins regulate the intensity of fear memory: From mice to men*  
Andreas Zimmer, University of Bonn, Germany

### LUNCH BREAK (Lunch on your own)

11:50 AM – 1:15 PM

### INRC Symposium 7

Great Hall 2  
1:15 PM – 3:15 PM

#### DELTA OPIOID RECEPTORS – NOVEL COMPOUNDS AND USES

Chair: Ellen Unterwald, Temple University School of Medicine, USA

- 1:15-1:40      *Dual efficacy of DOR subtype selective ligands for ethanol consumption and its side effects of withdrawal-induced anxiety and hyperalgesia*  
Jennifer Whistler and Richard van Rijn, Ernest Gallo Clinic and Research Center, University of California San Francisco, USA

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## Friday, June 24, 2011

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1:40-2:05      *Inhibition of human multiple myeloma cell proliferation by naltrindole*  
Richard D. Howells, UMDNJ-NJ Medical School, USA

2:05-2:30      *Delta agonist glycopeptides: CNS active drugs from endogenous neuropeptides*  
Robin Polt, University of Arizona, USA

2:30-2:55      *Delta opioid receptor agonists in Parkinson's disease: A reappraisal*  
Michele Morari, University of Ferrara, Italy

Hot topic

2:55-3:10      *Identity of dorsal root ganglion and spinal neurons mediating delta opioid receptor analgesia*  
G. Scherrer (1), B.L. Kieffer (2), A.I. Basbaum (3), A.B. MacDermott (1), (1) Columbia University, USA, (2) IGBMC, France, (3) UCSF, USA

INRC Symposium 8

Great Hall 2

3:30 PM – 5:35 PM

NOVEL THERAPEUTIC APPLICATIONS OF KAPPA OPIOID RECEPTOR LIGANDS

Chairs:          Ivy Carroll, Research Triangle Institute  
Bill Carlezon, McLean Hospital, USA

3:30-3:55      *Natural product-derived KOP ligands as novel treatments for drug abuse*  
Thomas E. Prisinzano, University of Kansas, USA

3:55-4:20      *High throughput in vivo screening for the identification of novel analgesics*  
Richard Houghten, Torrey Pines Institute for Molecular Studies, USA

4:20-4:45      *Kappa opioid receptor ligands and development of antipruritic agents*  
Alan Cowan, Temple University School of Medicine, USA

4:45-5:10      *Disruption of kappa opioid receptor function attenuates behavioral effects of stress in rodents*  
Bill Carlezon, McLean Hospital, USA

5:10-5:35      *Discovery and development of selective kappa opioid receptor antagonists*  
Ivy Carroll, RTI, USA

INRC BANQUET

CATALINA YACHT

7:00 PM – 10:00 PM

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## Saturday, June 25, 2011

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### BREAKFAST

Great Hall 2  
7:30 AM – 8:00 AM

### FOUNDERS LECTURE

Great Hall 2  
8:00 AM – 9:00 AM

*Dynorphins and the Kappa Opioid Receptor System – Past and Future*

Charles Chavkin, Allan and Phyllis Treuer Endowed Chair of Pain Research and  
Professor, Department of Pharmacology, University of Washington, Seattle, WA, USA

### INRC Symposium 9

Great Hall 2  
9:15 AM – 11:15 AM

#### MOR REGULATORY PROTEINS

Chair: Laura Bohn, The Scripps Research Institute, USA

9:15-9:40 *RGS9-2 actions in the nucleus accumbens modulate opiate addiction and analgesia*  
Vanna Zachariou, University of Crete, Greece

9:40-10:05 *In vivo evidence for the role of PKC and other intracellular molecules in opioid tolerance*  
William L. Dewey, Virginia Commonwealth University, USA

10:05-10:30 *CaMKII in opioid tolerance and opioid-induced hyperalgesia*  
Zaijie Jim Wang, University of Illinois, USA

10:30-10:55 *Mu opioid regulation by beta-arrestins and implications for drug development*  
Laura M. Bohn, The Scripps Research Institute, USA

#### Hot Topic

10:55-11:10 *Desensitization and trafficking of mu-opioid receptors in locus coeruleus neurons: Modulation by kinases*  
S. Arttamangkul, H.W. Lu, J.T. Williams, Vollum Institute,  
Oregon Health & Science University, Portland, Oregon, USA

### INRC Symposium 10

Great Hall 2  
11:30 AM – 1:40 PM

#### YOUNG INVESTIGATOR SYMPOSIUM: OPIOID MODULATION OF NEURAL CIRCUITS

Chair: Michael Bruchas, Washington University School of Medicine, USA

11:30-11:35 *Introduction*  
Michael Bruchas, Washington University School of Medicine, USA

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## Saturday, June 25, 2011

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- 11:35-12:00     *Stress regulation of kappa opioid receptor signaling in the extended amygdala*  
Thomas Kash, University of North Carolina School of Medicine, USA
- 12:00-12:25     *Opioid enhancement of GABA<sub>A</sub> receptor function in VTA dopamine neurons: A novel non-G protein mediated signaling mechanism induced by stress*  
Elyssa B. Margolis, Ernest Gallo Clinic & Research Center, UCSF, USA
- 12:25-12:50     *Dopamine-mediated synaptic transmission in the VTA*  
Christopher Ford, Case Western Reserve University, USA
- 12:50-1:15     *Context-dependent sensitization to morphine alters hippocampal neuroplasticity*  
Jose Moron-Concepcion, Columbia University Medical Center, USA
- 1:15-1:40     *Drug-induced GABA transporter currents enhance GABA release and produce opioid withdrawal behaviours*  
Elena Bagley, The University of Sydney, Australia

END OF INRC  
SEE YOU NEXT YEAR!

*BADGES MUST BE WORN FOR ALL SESSIONS AND SOCIAL EVENTS*

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## CPDD SYMPOSIA

### *I. Prenatal cocaine exposure in animals and humans: Sex differences across the lifespan*

Chairs: Cora Lee Wetherington and Samia Dawud Noursi

The purpose of this translational symposium is to present new data on sex differences in the effects of prenatal cocaine exposure and concomitant factors on a variety of endpoints across the lifespan. Data analyzed by sex/gender will be presented from two animal models and from two longitudinal cohorts. Dr. Dow-Edwards will present data from adolescent rats that were prenatally exposed to cocaine and at weaning were housed either under isolated or enriched (3 rats/cage with toys) conditions. At adolescence, they were tested for the effects of these variables on cocaine conditioned place preference and dopamine and serotonin transporters. Dr. Nader will discuss data from adult rhesus monkeys prenatally exposed to cocaine and aged 13-14 years old upon arrival in his lab. Outcomes include behavioral data (measures of impulsivity, operant behavior and cocaine self-administration), unconditioned behaviors elicited by drugs (quinpirole and SKF 38393) and brain imaging studies using PET and dopamine D2 receptors. Dr. Bandstra will describe birth through adolescence outcomes of prenatal cocaine exposure focusing on cognitive/neuropsychological (e.g., IQ, language, learning disabilities, attention, executive function, memory) and behavioral outcomes (e.g., childhood behavioral disorders, adolescent drug involvement and risky sexual activity). This longitudinal study has completed 13 prior waves of assessments through age 16/17 with an ongoing assessment at age 18/19 years. Lastly, Dr. Mayes will present fMRI data regarding relationships among prenatal cocaine exposure and later stress reactivity in adolescence (ages 14-17) as mediated by adverse early experiences. She will also describe how adolescent drug use and related risk taking are impacted by prenatal exposure, early stressors, and individual differences in brain activation in response to stress and appetitive imagery. Collectively these four presentations will underscore the variety of domains in which offspring can be impacted by exposure to prenatal cocaine and concomitant factors, both short-term and long-term, and the differential impact on males and females.

### *II. Naltrexone in the treatment of opioid addiction: Current research and novel applications*

Chairs: Kenneth Silverman and Sandra D. Comer

Opioid addiction is a chronic disorder that can require long-term treatment. Naltrexone is an opioid antagonist that could be an ideal medication for the long-term treatment of opioid addiction; however, naltrexone's utility has been limited because many patients discontinue its use prematurely. Recent development of sustained release naltrexone has renewed interest in using naltrexone to treat opioid addiction. This symposium will review research on available naltrexone formulations for the treatment of opioid addiction. Dr. Sullivan will review a decade of laboratory and clinical trials aimed at optimizing the use of naltrexone, including research on a behavioral therapy for naltrexone treatment and trials of depot naltrexone. Dr. Krupitsy will review clinical trials conducted in Russia over 12 years, including studies of oral naltrexone, sustained release implant naltrexone, and sustained release injectable naltrexone. Dr. O'Brien will review naltrexone studies in criminal justice populations and advance a novel and potentially cost-effective proposal in which selected non violent offenders could be offered monthly naltrexone injections in lieu of prison or as a condition for early release. Dr. Silverman will review clinical trials which show that employment can be highly effective in

## CPDD SYMPOSIA

motivating both oral and sustained release naltrexone adherence if individuals are required to take scheduled naltrexone doses to gain and maintain access to the workplace. Dr. Comer will discuss the presentations and address ethical issues surrounding antagonist maintenance. The symposium will provide an in-depth review of current research and novel applications of oral and sustained release naltrexone for the treatment of opioid addiction.

### III. *Plasticity in reward circuits during adolescence: Effects of early drug exposure*

Chairs: Sari Izenwasser and Kathleen Kantak

Adolescence is a vulnerable period associated with a high incidence of drug abuse initiation and an increased risk for developing dependence and addiction. Factors that modulate and are a consequence of the effects of drugs of abuse during this critical period of development will be discussed. **Dr. Sari Izenwasser** will present data on sex and age differences in the behavioral and neurochemical effects of social/environmental enrichment in adolescent rats on cocaine, nicotine and MDMA. **Dr. Kathleen Kantak** will present studies on the effects of self-administered cocaine on cognitive functioning in rats. She has shown that when exposure to self-administered cocaine is initiated during adolescence, stimulus-reward learning is unaffected, non-spatial working memory is disrupted and reversal learning is improved relative to passively yoked-control rats. This profile is different from that observed when exposure to cocaine is initiated during adulthood. Age-dependent regional differences in cocaine-induced neuroplasticity may underlie these distinct profiles. **Dr. Emilio Ambrosio** will present data on the effects of adolescent exposure to cannabinoids in morphine and cocaine self-administration behavior of adult male and female rats, as well as in several regulatory elements of opiodergic, dopaminergic, glutamatergic and GABAergic transmission, and in brain glucose metabolism measured by microPET.

### IV. *Epidemiology of chronic pain and clinical management among individuals with a substance use disorder*

Chairs: Lara Dhingra and Carmen Masson

Patients with substance use disorders (SUD) commonly experience chronic pain. However, there is limited research examining the issue of chronic pain management in this population. To address this gap in the literature, more research is needed to identify the epidemiology of pain in different subpopulations with SUD and to develop effective, tailored pharmacological and behavioral pain management strategies for specific patients. The session will include presentations from an interdisciplinary group of clinical researchers in pain and addictions medicine from academic medical settings and the National Institute on Drug Abuse (NIDA). The specific aims of the session are to: (1) present original data on the prevalence and correlates of pain in a multi-site sample of individuals undergoing methadone maintenance therapy in New York and San Francisco; (2) evaluate associations among pain, psychological distress, quality of life, and substance use in this population; (3) discuss clinical aspects of risk management for opiod therapy to improve chronic pain in SUD populations; and (4) evaluate the feasibility of novel behavioral interventions for the treatment of pain and comorbid SUD. The discussant for the session will synthesize the information from these presentations,



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discuss NIDA's research portfolio on pain and addiction, and outline new funding opportunities. This session will inform the development of novel interventions to improve pain management among vulnerable patients with addictive disorders, highlight strategies to reduce the risk of prescription opioid abuse in this population, and guide research and clinical efforts to improve public health related to pain control and addiction treatment.

### V. *Drug related attentional bias and cue reactivity: Neuropsychological mechanisms and clinical relevance*

Chairs: Lee Hogarth and Marcus Munafo

This symposium will examine the role of drug related attentional bias and drug cue reactivity in addictive behaviour, addressing the neuropsychological mechanisms, clinical application and animal modeling of these phenomena. The talk by Hogarth will describe recent work on the associative basis of drug cue reactivity using human drug conditioning procedures translated from animal behavioural neuroscience. The talk by Adams will address the reliability of two standard assays of attentional bias, the Stroop task and the dot probe task, and will point the way to developing more sensitive measures of drug related attentional bias. The talk by Garavan will address the neural mechanisms of the attentional bias, its inhibition by cognitive control processes, and how this inhibitory capacity may be important for maintaining abstinence. The talk by Lubman will describe recent evidence that differential reactivity to drug cues versus natural reward cues is a key predictor of abstinence following drug treatment. Finally, the talk by Shoaib will examine animal models of drug cue reactivity and the utility of these models for screening candidate medications for addiction. Overall, the symposium will encompass the translational breadth of attentional bias and drug cue reactivity research in contemporary addiction science.

### VI. *K2/Spice – synthetic cannabinoids as emerging drugs of abuse*

Chairs: William Fantegrossi and Jenny Wiley

K2 / Spice is an emerging drug of abuse, often touted as “legal marijuana”. Most K2 products are plant materials laced with synthetic cannabinoids with psychoactive properties similar to those of  $\Delta^9$ -tetrahydrocannabinol ( $\Delta^9$ -THC). The synthetic compounds in K2 products are aminoalkylindole (AAI) derivatives, and, like  $\Delta^9$ -THC, these compounds bind and activate cannabinoid CB1 receptors in the CNS. Many different K2-AAIs are present in various K2 preparations, but because AAIs are structurally distinct from  $\Delta^9$ -THC, governmental regulation of K2 products is inconsistent or totally lacking in many states, and traditional urine drug screens fail to detect K2 use. This symposium is designed to present a highly translational view of what is currently known about K2 / Spice. The chemistry of the compounds typically found in K2 will be reviewed, paying particular attention to how this influences regulatory decisions (Boos). Efforts to survey K2 products and develop analytical techniques useful for determining identities and amounts of active compounds in these products, as well as detection of K2 metabolites excreted in urine, will also be presented (Moran.) Clinical signs and symptoms associated with acute K2 intoxication will be discussed, and compared with marijuana intoxication (McCain). The unique receptor binding, intrinsic activity, and *in*

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*vivo* effects of cannabinoids commonly found in K2 will be described (Fantegrossi). Finally, a historical perspective will be applied to the study of K2 constituents, comparing and contrasting their actions with those of more traditional cannabinoids (Wiley). This timely symposium will be of interest to clinicians and basic scientists alike.

### VII. *Abuse liability and product appeal assessment of tobacco products*

Chairs: Dorothy Hatsukami and Jack Henningfield

Abuse liability assessment of tobacco products has become critical because of the recent passage of the Family Smoking Prevention and Tobacco Control Act. While valid experimental methods of abuse liability assessment (ALA) are used for testing medications or drugs that might pose a risk for abuse, there is less experience in the application of ALA to tobacco products. Furthermore, tobacco products pose special challenges compared to most medications (e.g., tobacco products are complex mixture of constituents in products; new substances are present in the emissions; sensory factors can further influence nicotine intake, self-administration patterns and reinforcing efficacy of the product). Although non-pharmacological factors are important determinants of use, abuse, and addiction to drugs, such factors (e.g., product packaging and advertising, product claims, consumer perceptions) appear of even greater importance as determinants of use and addiction to tobacco products. Such consumer or product appeal factors are not included in traditional abuse liability assessment. The goals of this symposium will be to summarize the proceedings of a meeting on this topic that was co-sponsored by CPDD. We will discuss what we know about the assessment of pharmacological abuse liability of tobacco products (L. Carter), provide a conceptual framework that will allow us to identify and assess additional factors that influence use and addiction to tobacco products such as consumer marketing and product appeal (V. Rees), discuss the nature of post-marketing surveillance of tobacco products (J. Henningfield) and identify research needs and recommend a regulatory framework (E. Sellers).

### VIII. *The role of parental mental disorders and parental rearing behavior for cannabis use and cannabis use disorders in offspring*

Chairs: Silke Behrendt and Ty A. Ridenour

By early adulthood, nearly all incidence of cannabis use (CU) and cannabis use disorders (cannabis abuse and dependence; CUD) has occurred. Although evidence demonstrates a familial aggregation of CUD, few studies have investigated the roles of parental psychiatric disorders (i.e. anxiety, mood and substance use disorders), rearing style and their possible interplay in the etiology of offspring CU and progression to CUD using prospective-longitudinal designs. This symposium will elucidate these relationships with four investigations, each emphasizing different elements of these variables, using international samples of varying ages. All four studies are prospective-longitudinal (three community samples and one high-risk sample), covering a developmental interval from late childhood through early adulthood. The first study addresses the role of parental monitoring for offspring first CU and regular CU in a large epidemiological Dutch study. Using a U.S. community-based family study, the second contribution specifically addresses the association between parental major depression and CUD and these same

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disorders in offspring, focusing on how risk differs for adopted and biological offspring. The third study investigates the role of paternal and maternal psychiatric disorders (substance and non-substance disorders), rearing style and their combinations for CU/CUD in offspring in a high-risk U.S. sample of offspring from ages 10-12 through 22. Lastly, a German community study focuses on associations between parental substance use, anxiety and affective disorders and offspring CU/CUD taking into account parental rearing style. The discussion will concentrate on converging/divergent results among studies, etiological importance of the findings and implications for family-based prevention programming.

### IX. *Nutrition and Addiction: Food for thought*

Chairs: Rao Rapaka and David Shurtleff

In addition to being highly palatable and rich in calories, the Western diet is generally poor in many micronutrients – vitamins, minerals, lipids and others – that are essential for human health. Moreover, it is becoming clear that excessive consumption of palatable food can drive reward dysfunction and, thereby, contribute to diet-induced obesity. It is also becoming increasingly clear that chronic micronutrient deficiencies can produce subtle but persistent damage to multiple organs of the human body, including the brain. Prolonged deficiencies of minerals such as iron, zinc and selenium can disrupt brain development and brain function. Lower-than-normal intake of vitamins (e.g., D and B12), lipids (e.g., omega-3 polyunsaturated fatty acids), essential metabolites and enzyme cofactors (e.g., choline and homocysteine) are also thought to exert harmful effects on attention, memory and mood. This dietary imbalance is largely due to the increasing prevalence of processed food products. Thus, long-term micronutrient deficits and chronic consumption of palatable food might lead to dysregulated neural networks that are involved in cognition and may manifest as severe psychiatric disorders including addiction, major depression, impulse control disorders and suicide. Similarly, drugs of abuse can cause a reduction in key micronutrients (e.g., choline, creatine) that can affect neuronal function. The goal of this symposium is to highlight the role of micronutrient deficits and palatable food consumption on brain function and disorders of addiction. In addition, the symposium will explore how micronutrient replacement might be used to improve brain function and treat addiction disorders.

### X. *CPDD International Committee Symposium: Volatile substance misuse: A global call for action*

Chairs: Flavio Pechansky and Colleen Anne Dell

When compared with other drugs used at a similar prevalence, the misuse of volatile substances (VSM) has attracted relatively little research effort. The goal of bringing together experienced voices from across the globe in this second symposium of the International Committee of CPDD is to increase understanding of, and put forth a call for action toward, VSM as an important public health issue. Volatile substances are a large and diverse group of chemical compounds contained in hundreds of household and industrial products. As such, they are among the first drugs of choice used by children and youth. VSM has diverse as well as common effects on the health and welfare of

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users, their families and communities across the globe. In this session, cross-country concerns are examined, alongside recent advances in understanding and responses.

Dr. Howard's presentation will review the epidemiology, phenomenology, and natural history of inhalant use. The focus will be on recently published investigations in these areas and potential avenues for future research investigations. Dr. Silvia Cruz will approach the topic from the neuro-biological perspective. And Dr. Sarah MacLean will discuss therapeutic interventions with VSM. Dr. Robert Balster will be the session discussant, leading a conversation about prevention policies and key research aspects. Participants will be encouraged to re-evaluate and expand their knowledge about volatile substance misuse. The presenters in this session are all contributors to a forthcoming special VSM issue of the journal of *Substance Use & Misuse*.

### XI. *Rethinking the effects of methamphetamines*

Chairs: Hedy Kober and Matthew Kirkpatrick

Methamphetamine abuse continues to be a significant worldwide problem and the possible deleterious effects of methamphetamine use on cognition and mood have received much empirical and popular attention. With slogans like “not even once,” the modal view suggests that methamphetamine is dangerous, use is uncontrollable, and chronic use leads to neurocognitive deficits. Indeed, a large human literature associates methamphetamine to psychological disturbances (Grelotti et al., 2010) and cognitive impairments (Baicy and London, 2007), and it has been suggested that methamphetamine-related cognitive impairments may be associated with adverse treatment outcomes (Sofuoglu, 2010). Importantly, however, the impact of illicit methamphetamine use on cognition and mood has not been fully elucidated. For example, in many investigations of the long-term cognitive effects of methamphetamine abuse, users performed within the normal range for their age group and educational background (Chang et al., 2002; Johanson et al., 2006). Additionally, in studies examining the acute effects of the drug, methamphetamine *improved* performance on wide range of tasks (Wiegmann et al., 1996; Silber et al., 2006). Given these discrepancies, do we need to rethink the cognitive effects of methamphetamines? The aim of this symposium is to present emerging work on the effects of methamphetamine on behavior, cognition, and mood, in order to explore the apparent contradicting results of previous research. Speakers will discuss both the acute and long-term effects of methamphetamine on cognition and mood, the diverse neural mechanisms that underlie reinforcing and cognitive effects, and the implications of these effects for treatment efficacy.

### XII. *Social environment and drug-seeking: Neurobiological factors*

Chairs: Linda Dykstra and Mark Smith

The social environment plays a key role in shaping an individual's attitudes, preferences, and choices regarding drug use. Studies in genetics and imaging, coupled with traditional pharmacological lines of investigation, are revealing how neurobiological factors interact with the social environment to influence drug-seeking behavior. For instance, scientists are now beginning to understand the neurocircuitry and neuropharmacology mediating the effects of social stress on drug self-administration. Scientists are also beginning to

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understand the molecular mechanisms by which social and environmental enrichment produces protective effects on drug-seeking behavior. Finally, scientists are beginning to understand how these biological factors interact with sex and social rank to determine an individual's sensitivity to various drugs of abuse. Knowledge of all these factors will be critical as substance abuse researchers and clinicians begin to tailor prevention and treatment interventions for specific populations. The aims of this symposium are to (1) demonstrate how recent research in genetics, imaging, and neuropharmacology is revealing the mechanisms by which the social environment influences drug-seeking behavior, (2) determine how the social environment interacts with the neurobiology of the organism to influence drug-seeking behavior, and (3) discuss how knowledge of the interplay between neurobiology and the social environment can be used to guide the development of new interventions for the prevention and treatment of substance use disorders.

### XIII. *Neurocognitive dysfunction in addiction: Mechanisms and interventions*

Chairs: Warren K. Bickel and Will M. Aklin

Addiction is a complex disorder in which numerous factors come into play (e.g., behavioral economic, developmental, environmental, genetic, etc). One factor that has begun to be increasingly recognized as an important process in addiction is neurocognitive dysfunction (also referred to as executive dysfunction). Neurocognitive dysfunction refers to deficiencies in variety of neurocognitive/executive functions including attention, valuation of delayed outcomes, planning and memory. A growing number of studies are showing that neurocognitive dysfunction appears to be a part of the addiction process and predictive of treatment outcomes. The next step in the study of these dysfunctions is to describe the specific processes and mechanisms associated with neurocognitive dysfunction and develop potential therapeutics to improve them. This translational symposium describes recent advances in the study of neurocognitive dysfunction in addiction, the underlying mechanism, and novel therapeutic approaches to improving cognitive dysfunction. Specifically, our speakers will present their recent findings that employ computational neuroscience, and human laboratory studies of cognitive dysfunction in addiction, and efforts to improve those dysfunctions via medication and neurocognitive rehabilitation processes. These findings will illustrate the importance of addressing neurocognitive dysfunction and set the occasion for additional research that will explore the genetics of neurocognitive dysfunction, the specific targets for therapeutic development, the role of developmental processes, and environment modulation of these processes. At the conclusion of this symposium discussion will address the mechanisms of dysfunction, development of potential candidate therapeutics, and their role in addiction treatment.

### XIV. *Brain imaging as a tool for treatment development in stimulant abuse*

Chairs: F. Gerald Moeller and Perry F. Renshaw

In spite of substantial strides in our understanding of the basic neuroscience of addictions, development of effective treatments, especially effective pharmacotherapies for addictions, has developed less rapidly. Recently, there is data that brain imaging may be

## **CPDD SYMPOSIA**

useful as a tool in development of effective treatments for addictions. The goal of this symposium is to present data from clinical and preclinical studies using a variety of magnetic resonance (MR) imaging techniques showing the potential utility of brain imaging as a tool in treatment development research in addictions, with a focus on stimulant abuse. Data will be presented from functional MRI, pharmacofMRI, diffusion tensor imaging, and MR spectroscopy. Using these imaging methods, data will be presented showing that brain imaging can be used to gain a greater understanding of risk for development of addiction and relapse, as well as the interaction between brain function and treatment response in stimulant abuse. In addition, data will be presented showing that brain imaging can be used to examine acute and chronic effects of potential therapeutic agents in stimulant abuse to aid in medication development. Challenges and potential rewards of using brain imaging as a tool for treatment development will also be discussed.

## CPDD WORKSHOPS

### *I. 17th Annual Contingency Management Working Group*

Chairs: Kelly Dunn and Kathryn Saulsgiver

The Contingency Management (CM) Working Group, held annually during the CPDD convention, is an opportunity for the dissemination and discussion 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 17th 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 2011 in order to capture the most current data in contingency management for presentation at our annual working group.

### *II. Media Training*

Chairs: Kathleen Brady and Martin Y. Iguchi

This workshop is designed to help participants prepare for interviews with media, including advice on how to prepare for interviews, pitfalls to avoid, and strategies for effective communication. Facilitators include Tom Linden, M.D. Glaxo Wellcome Distinguished Professor of Medical Journalism in the School of Journalism and Mass Communication at the University of North Carolina at Chapel Hill as well as several newspaper and television reporters. As director of the Medical and Science Journalism Program at UNC-CH, Dr. Linden teaches courses for both undergraduate and graduate students and administers one of the nation's first master's programs in medical journalism. Participants are encouraged to bring in specific examples of situations that they have encountered with the media for discussion.

### *III. Assessing and monitoring risk for prescription opioid abuse across diverse populations*

Chairs: Andrea Barthwell and Lynn Webster

Predicting and assessing risk for prescription opioid abuse across different populations can be challenging and approaches may require adaptation based on the type of population being assessed. Particular populations that may be vulnerable to prescription abuse include adolescents and persons abusing drugs and alcohol for recreational purposes, pain patients that are exposed to these medications for treatment, as well as persons with addictive disorders. Identifying and mitigating the risks associated with drug

## CPDD WORKSHOPS

abuse is critical, given the growing rates and societal implications of drug abuse. Manifestations of behaviors around prescription opioid abuse vary with each population type, and tools used for clinical assessment need to be adaptable. Outcomes and limitations of both objective and subjective tools need to be carefully considered. Furthermore, tools need to be selective to differentiate abuse from misuse, and in the case of pain patients, distinguish drug-seeking behavior related to pseudo-addiction or the under-treatment of pain. In addition, standardization of definitions for abuse, misuse, and recreational drug use are needed. This symposium will review current definitions, current tools available that can be appropriately used in different populations, and the limitations and critical gaps in this area.

### IV. *Frontiers in systems modeling: Bridging science and policy*

Chairs: Alison Ritter and Georgiy Bobashev

The use of modeling techniques, including agent-based modeling and mathematical modeling have become central to advancing knowledge and policy in the area of drug dependence. Modeling symposia and workshops have been held at CPDD for the last several years. Given the field advances and the vast increase in modeling use for policy evaluation, the 2011 workshop will emphasize the applications of modeling methods by showcasing a range of models of interest to the broad CPDD public who do not need to be mathematicians to appreciate the utility of the models to research and policy making. This workshop brings a fresh group of internationally recognized presenters to CPDD, all of whom have extensive expertise in modeling. The aims of the workshop are to 1) engage the delegates in both the theory and practice of modeling in the area of drug abuse and dependence; 2) demonstrate different types of modeling approaches and the diverse methodological approaches; and 3) articulate both the practice and policy implications that arise from the models presented. An important feature of the carefully selected presenters and discussant is the focus on the modeling policy and practice implications; the discussant having worked in government, in clinical practice and used models actively. It is through the application of this scientific method that we will demonstrate the ways in which models contribute to the evidence-base and can sit alongside randomized controlled trials and other forms of ‘evidence’ to inform better practice and policy responses.

### V. SASATE

Chairs: Catherine Stanger and Michael Dennis

Contingency management has been successfully used to target adolescent marijuana and tobacco use. However, the literature in adolescents is in its early stages compared to CM applications with adult substance abuse. There are unique issues relevant to the use of CM with adolescent populations. The success of CM interventions will be influenced by at least 5 factors: the *schedule* used to deliver incentives, the *magnitude* of the incentives, the *choice of the target behavior*, the selection of the *type of consequence*, and the *monitoring* of the target behavior. These dimensions are important to consider in developing, testing, and disseminating CM interventions. This workshop will involve a series of presentations on recent adolescent substance use research on CM approaches in outpatient and school settings with a focus on the technical aspects of CM development, implementation and dissemination issues. Participants will learn 1) How to identify



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important methodological issues likely to influence the efficacy of CM interventions for adolescent substance use; 2) outcomes of studies examining CM approaches in clinical and school settings; and 3) Predictors of successful CM adoption in community settings. Following the panel discussion will be a brief business meeting for the Society for Adolescent Substance Abuse Treatment Effectiveness (SASATE) chaired by Dr. Michael Dennis.

### *VI. Career development: A perspective from junior and senior researchers*

Chairs: Gerald McLaughlin and Scott Chen

Developing a career involves a series of decisions, often made with limited information or assistance. The purpose of this workshop is to provide a forum for thinking more creatively and systematically about one's career decisions by inviting both junior and more senior scientists to reflect on their own career choices and experiences, as well as those of their colleagues, and encouraging substantial audience participation. Topics such as mentor/mentee suggestions; networking; advantages of academic, industry or government positions; and job interview guides will be considered. About half the time will be allotted for presentations by speakers with a spectrum of backgrounds, and half the time is available for audience discussion/questions. We encourage potential attendees to submit topics of interest to the workshop chairs before the CPDD meeting so that these can be shared with the speakers and participants.

### *VII. NIDA Medications Development Workshop 2011*

Chairs: David McCann and Phil Skolnick

This workshop will provide an opportunity for two-way communication between NIDA staff and researchers in the field of medications development. Three NIDA presentations will focus on topics of importance to the field: 1) an FDA-suggested endpoint for trials evaluating medications for cocaine and methamphetamine addiction treatment; 2) medication non-compliance in clinical trials and methods for addressing the problem; and 3) promising new pharmacotherapies in late preclinical and Phase I development. Approximately 20 minutes at the end of the workshop will be devoted to comments from the field. Attendees will be asked to share their perceptions of the biggest challenges facing the field of medications development.

### *VIII. FDA draft guidance on testing of the abuse potential of compounds:*

*Dialogue between industry and the FDA Controlled Substance Staff*

Chairs: Beatriz Rocha and Silvia Calderon

In 2008 the Cross Company Abuse Liability Consortium (CCALC) held a first Dialogue Session on abuse potential assessment with the FDA Controlled Substance Staff (CSS). Participants were representatives from more than 25 pharmaceutical companies, CSS, and from CDER Review Division and Management. The meeting focused on the prospective assessment of abuse potential, both preclinical and clinical, and successfully furthered industry-FDA understanding regarding requirements for abuse potential assessment. It was especially useful and important given the lack of published guidance on abuse potential assessment at the time. CPDD had the unique opportunity to be updated on

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such discussions through a workshop held during the 71st Annual Meeting. In January, 2010 FDA published the Draft Guidance on Testing of the Abuse Potential of Compounds, and since then the CSS has been receiving public comments. A second Dialogue Session between the CCALC and FDA took place in November 2010. This Dialogue represents CSS outreach to the CCALC in seeking to have a collaborative discussion about the Draft Guidance. Procedural issues, including the role of NIDA during a New Drug Application (NDA) review, were discussed, and numerous questions submitted to the FDA from various stakeholders were addressed. Other issues discussed included preclinical, clinical and post marketing studies evaluating abuse potential of new products.

### *IX. Getting SMART about developing individualized sequences of health interventions*

Chairs: Susan A. Murphy and Daniel Almirall

The effective management of a wide variety of substance use disorders often requires individualized, sequential decision making, whereby treatment is dynamically adapted over time based on an individual's changing course. Adaptive health interventions operationalize individualized, sequential, decision making via a sequence of decision rules that specify whether, how, for whom, and when to alter the intensity, type, or delivery of psychosocial, behavioral, and/or pharmacological treatments at critical decision points in the management of chronic disorders. Adaptive health interventions can be used to develop or supplement clinical treatment guidelines. The aim of this workshop is to describe and discuss the use of a novel experimental design—sequential multiple assignment randomized trials, or SMART—intended specifically for the purpose of developing and optimizing adaptive health interventions. Specifically, the workshop will involve three presentations. The first presentation will define adaptive health interventions, discuss why they are important, and will introduce SMART designs, including a description of basic SMART design principles and the types of primary and secondary scientific questions that can be addressed in a SMART. The second and third presentations will discuss experiences and issues related to the motivation for, planning, conduct, and/or data analysis of two SMART studies currently in the field. Ample time will be set aside for questions, comments, and in-depth discussion. Participants will be encouraged to share experiences and ideas from their own research as a way to connect with the material. Participants attending this seminar should be familiar with the basic principles of experimental design.

### *X. NIDA research resources: An update on the NIDA Drug Supply and Analytical Services Program*

Chairs: Hari H. Singh and Rao S. Rapaka

The National Institute on Drug Abuse (NIDA) provides an array of services at no cost to qualified research investigators through its Drug Supply and Analytical Services Program. Although this program has been in existence for quite some time, many research investigators, particularly early career investigators are not aware of this program. The proposed workshop will give CPDD attendees an opportunity to learn about this program and make them aware of various services provided by NIDA free of cost. Highlighted topics will include 1) an overview of NIDA's Drug Supply and

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Analytical Services Program which include the supply of DEA controlled drugs and other chemical substances that may or may not be controlled, but serve as biological probes for basic research and help in developing possible therapeutics for the treatment of drug addiction, (2) procedures for the acquisition of inventoried substances, their storage and distribution under controlled environment; 3) procedure for X-ray crystallography of chemical compound and biological substrates, and finally 4) procedures for analysis of experimental samples received from NIDA-supported studies. Overall the NIDA-sponsored workshop will provide a detailed and updated overview of the NIDA Drug Supply and Analytical Services Program's purpose, procedures, and functioning, so that new and experienced investigators can take advantage of these freely available supplies to facilitate their research.

### *XI. What's new at NIDA and NIH: Peer review and other policies that affect applicants*

Chairs: Meena Hiremath, Mark Swieter, and Teri Levitin

This workshop is intended to provide an opportunity for participants to learn about new policies and procedures at NIH and NIDA that are relevant to them. Topics will include changes in the peer review process at NIDA and the Center for Scientific Review (CSR) associated with the implementation of Enhancing Peer Review, tips on grant preparation, and how to find somebody to help you with your application. Other topics and questions of interest to the audience will be addressed. This is very much an interactive, audience-directed activity. We see this workshop as a public service to the CPDD community, with issues we discuss determined by audience interest. Although we will have a list of topics of interest, as is always the case with these presentations, audience members may ask about the budget, recent Advisory Council reports, new research directions at NIDA, various NIH support mechanisms, or any other subject.

### *XII. A systematic approach to selection and measurement in clinical trials research*

Chairs: George Bigelow and Carmen Rosa

Drug use dependence continues to be a major public health problem. Clinical trials test the efficacy of behavioral and pharmacological interventions in dependent individuals. There is no consensus about the most appropriate outcome(s) to consider in determining treatment efficacy or on the most appropriate methods for assessing the selected outcome(s). Having a commonly employed outcome (or a set of common outcomes) that could be used consistently across all clinical trials would facilitate treatment research. Discussions among experts suggests that the most appropriate outcome will vary as a function of salient variables inherent in the particular clinical trial, such as the type of intervention, its target, the treatment goals (e.g., abstinence or harm reduction drug use goals, improved psychosocial function), and the perspective being taken (e.g., researcher, clinical program, patient, society). This workshop will provide a discussion venue for researchers and practitioners to discuss the value of developing a decision tree approach, based on these trial variables, to guide the selection of primary and secondary outcomes, as well as the methods to assess them. Speakers will discuss 1) issues around drug use as primary outcome, 2) measuring drug use, 3) what other outcomes are clinically significant and should be evaluated in clinical trials as a set of common outcomes; and 4) recommendations.

XIII. *When clinical adverse events signal drug abuse potential*

Chairs: Edward M. Sellers and Kerri A. Schoedel

As human abuse liability studies are typically conducted in recreational drug-using populations, clinical evaluations of abuse/dependence in healthy volunteer and patient populations are based primarily on spontaneously reported abuse- and discontinuation-"related" adverse events observed in clinical trials. Although these events can signal the presence of mood-elevating, sedative, stimulant and hallucinogenic properties, or neuroadaptation and physical dependence, the evaluation of abuse- and dependence-related events has not yet been rigorously studied. Further research is needed to establish correlations between adverse events reported in clinical trials and controlled psychometric assessments, and to identify which events may be predictive of actual abuse or dependence. In addition, structured assessments of CNS effects (e.g., visual analogue scales, structured interviews) may be more sensitive for detecting abuse-related effects but are generally not implemented in large-scale trials. Although these data represent essentially the only pre-market opportunity to risk in intended therapeutic populations, a consensus review is needed in order to achieve greater standardization for the analysis and presentation of abuse and dependence-related data from clinical trials. Therefore, the aim of this workshop is to initiate discussion of issues surrounding the collection and interpretation of adverse event terms of interest, investigator training, case report management, and the potential use of alternative scales, with input from industry, academic, investigator and regulatory perspectives.

## **EPIGENETICS**

### **DNA methylation: a dynamic and stable regulator of memory**

C.A. Miller, Department of Metabolism & Aging, Department of Neuroscience, The Scripps Research Institute, Jupiter, FL, USA

A new line of neuroscience research suggests that epigenetics may be the site of nature and nurture integration by providing the environment with a mechanism to directly influence the read-out of our genome. Epigenetic mechanisms in the brain are a series of post-translational chromatin and DNA modifications driven by external input. Given the critical hub of epigenetics, neuroscientists have come to suspect its fundamental influence on how our minds change in response to our unique environment and, in turn, how these changes can then impact our future interactions with the environment. We are particularly interested in the role that associative memory plays in driving relapse to drug use, as well as the epigenetic influences on the long-term maintenance of this behavior. Because neuroepigenetics was such a young field at the time we began, we first investigated the mechanisms of simple associative fear memories. Our approach was particularly focused on an epigenetic transcriptional silencing mechanism that has been studied extensively as a lifelong molecular information storage mechanism put in place during development, DNA methylation. We found that learning is associated with hippocampal upregulation of the enzymes responsible for methylation (DNA methyltransferase; DNMT), as well as a rapid increase in the methylation of memory-associated genes. Specifically, a memory suppressing phosphatase, PP1, is transcriptionally silenced through methylation, while a memory promoting gene, *reelin*, is activated. Further, formation of the associative memory is blocked by intra-hippocampal administration of a DNMT inhibitor. Interestingly, these hippocampal changes return to baseline less than a day after learning. This shifted our focus to the cortex, where many types of memories are thought to reside in the long-term. We found that persistent, gene-specific hypermethylation is induced in the cortex by a single, hippocampus-dependent associative learning experience. Further, pharmacologic inhibition of methylation one month after learning disrupts long-term memory maintenance. We are currently taking this new knowledge of neuronal DNA methylation's roles in memory and applying it to animal models of relapse to drug-seeking. Funding provided by NIDA (4R00DA024761-03).

### **The role of chromatin modifying enzymes in the acquisition and extinction of context-drug associated memory**

M. Malvaez, S.C. McQuown, G.A. Rogge, M.A. Wood, Dept. of Neurobiology and Behavior, Center for the Neurobiology of Learning & Memory, Univ. of California Irvine, CA, USA

Repeated use of drugs of abuse causes persistent alterations in gene expression responsible for the long-term behavioral and structural changes in central reward pathways. Recently, it has been suggested that epigenetic mechanisms are responsible, in part, for these drug-induced changes in gene expression. Epigenetic regulation of gene expression may provide transient and potentially stable conditions, which in turn may ultimately participate in the molecular mechanisms required for neuronal changes subserving long-lasting changes in drug-seeking behavior. Our research is focused on understanding the role of chromatin modifying enzymes in the acquisition and extinction of context-drug associated memory formation. In particular, we examine how the histone

acetyltransferase CREB-binding protein (CBP) and the histone deacetylase 3 (HDAC3) are pivotally involved in regulating histone acetylation required for transcription underlying context-cocaine associated memory formation using the conditioned place preference (CPP) paradigm. One exciting result of this research is that HDAC inhibition after establishing a CPP significantly facilitates extinction of drug-seeking behavior in a manner that is refractive to reinstatement. Thus, understanding chromatin modifying mechanisms that establish and maintain drug-dependent plasticity changes may lead to a better understanding of substance abuse disorders as well as novel approaches for treatment. Supported by NIDA (DA025992) and NIMH (MH081004) grants to M.A.W., an NRSA fellowship (DA029368) to M.M., and Repligen Corporation.

**Epigenetics of opioid receptor genes – nutrients, drugs and behavior**

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The three opioid receptor genes, MOR, DOR and KOR, are differentially regulated but share a highly conserved genomic structure and promoter feature. Classical studies established various combinations of transcription factors in regulating these genes in different cellular contexts. Recent studies uncovered fundamentally important roles for chromatin remodeling in the manifestation of these genes' plasticity, which underlines distinct behavior of the three opioid receptor genes in response to different transcription factors' action and in various biological contexts. Diets, drugs and behavior all can potentially modulate these genes' chromatin remodeling processes, thereby altering their chromatin conformation that is principally responsible for the gene's activity. This paper will present findings supporting epigenetic regulation of opioid receptor genes by various environmental factors, and discuss studies that have begun to examine the molecular mechanisms.

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**Chromatin plasticity in addicted brain: prodynorphin upregulation in human alcoholics**

G. Bakalkin, M.M.H. Taqi, H. Watanabe, O. Kononenko, T. Yakovleva and I. Bazov, Dept. Pharmaceutical Biosciences, Uppsala University, Sweden.

Genetic, epigenetic and environmental factors may influence the risk for neuropsychiatric disease through their effects on gene transcription. We hypothesize that these effects may be integrated through changes in chromatin states involving methylation of CpG dinucleotides that overlap with single-nucleotide polymorphisms (SNPs) associated with a disorder. We addressed this hypothesis by analyzing methylation of prodynorphin (*PDYN*) CpG-SNPs, reported to be associated with alcohol dependence, in the brain of human alcoholics. Analysis of postmortem human brain specimens demonstrated that *PDYN* expression is activated in discrete brain loci including the dl-PFC in alcoholics. This activation may contribute to cognitive dysfunctions relevant for "preoccupation / anticipation" stages of addiction and disrupted inhibitory control. Three of five *PDYN* SNPs associated with alcohol dependence were found to overlap with CpG dinucleotides. Methylation of these three CpG-SNPs was analyzed by pyrosequencing in the dl-PFC and

motor cortex (MC; no expression changes) from 14 alcohol dependent and 14 control subjects. In the dl-PFC but not in the MC of alcoholics, methylation levels of one of these three CpG-SNPs, the C, non-risk variant of 3'-untranslated region (3'-UTR) SNP (rs2235749; C>T) were increased ( $P < 0.001$ ). This methylation positively correlated with *PDYN* mRNA and dynorphins ( $P < 0.05$ ). A DNA-binding factor that differentially targeted the T, risk allele and methylated and unmethylated C allele of this SNP was identified. This factor may be involved in *PDYN* transcription through binding to the methylated 3'-UTR SNP C or T allele. The findings suggest a causal link between alcoholism-associated *PDYN* 3'-UTR CpG-SNP methylation, activation of *PDYN* transcription, and vulnerability to develop alcohol dependence in subjects with the non-risk SNP variant. Methylation of CpG-SNPs associated with a disease under environmental influences may be a general phenomenon affecting gene expression and contributing to disease susceptibility. Supported by the Swedish Council for Working Life and Social Research, and the Swedish Science Research Council.

## BRAIN IMAGING

### Imaging opioid effects on brain systems

Lino Becerra, Center for Pain and the Brain, Harvard Medical School, Boston, USA

Imaging has provided opportunities to evaluate drug effects on brain function and structure. Opioids, classically used as analgesics are also drugs of abuse. In this session we will discuss two aspects of opioid actions on brain function. The first will discuss different opioid agonist and antagonist pHMRI results, showing that specific features of opioid subtypes may be evaluated using functional and pHMRI. The second will discuss potential long-term effects of opioids on brain structure and function. Acknowledgements: Louis Herlands Fund for Pain. Imaging Consortium for Drug Development.

### Mu-opioid receptors and cocaine addiction

D.A. Gorelick, Intramural Research Program, National Institute on Drug Abuse, National Institutes of Health, Baltimore, MD, USA

Mu-opioid receptors (mOR) are expressed on neurons in several brain regions considered to play a role in cocaine use and craving, and are up-regulated by binge administration of cocaine to rodents. We conducted a series of studies, in collaboration with the Johns Hopkins PET Center, evaluating regional brain mOR binding potential (BP) in healthy adults with current cocaine abuse or dependence, no other current psychiatric disorder (except nicotine dependence), and minimal recent use of other drugs (except cigarettes). The PET radioligand was [ $^{11}\text{C}$ ]carfentanil, a selective mOR agonist. The initial study of 10 men found significantly increased (10-50%) mOR BP, compared to 7 non-addicted controls, in frontal, temporal, and anterior cingulate cortex and striatum after 1-4 days of abstinence. Increased BP in most regions was positively correlated with cocaine craving, and declined towards normal in most subjects after 28 days of abstinence. A second study in 17 non-treatment-seeking cocaine users and 16 healthy controls found increased mOR BP in frontal, anterior cingulate, and lateral temporal cortex after 1 days of abstinence, which correlated with cocaine craving and amount of cocaine use in the 2 weeks prior to admission. Binding remained elevated after 1 week in the frontal cortex, and after 12 weeks in the anterior cingulate and anterior frontal cortex. A shorter interval

before relapse to cocaine use (after discharge from the secure research ward) was associated with increased mOR BP in frontal and temporal cortex and with lesser decrease in BP between 1 and 12 weeks. A third study in 25 outpatients receiving psychosocial treatment for cocaine addiction found significant associations between increased mOR BP in medial and middle frontal gyri and greater cocaine use and shorter duration of cocaine abstinence during the 12 weeks of treatment. These findings suggest that brain mOR play an important role in human cocaine addiction and may offer a therapeutic target for developing new treatments. Supported by the IRP, NIH, NIDA and NIH grants R01-DA 09479, DA-11774, & DA-12274.

#### **Development and clinical use of a PET radioligand for the kappa receptor**

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Both pre-clinical and postmortem human studies investigating kappa receptor binding in cocaine abuse shown that the kappa receptor plays an important role in addiction. Thus, we developed a radiotracer to image this receptor in humans. The initial work performed in baboons showed that this radiotracer was able to cross the blood brain barrier, and had a good ratio of specific to non-specific binding. In addition, the uptake kinetics showed that significant washout occurred within the time frame of the PET experiment. PET blocking studies with naltrexone showed that the cerebellum could be used as a reference region. Subsequent to this, biodistribution studies were performed in human volunteers, in order to measure the organ exposure, which showed that the radiotracer could be used in clinical studies that required multiple scans. Based on these findings, brain imaging studies were performed in human volunteers. To date, studies in control subjects show that kinetics of the radiotracer vary significantly from the baboon studies, such that long scan times are required. In addition, there is no observable reference region in human subjects, such that scans with naltrexone are needed to obtain the non-specific distribution volume. Thus, while clinical studies performed with this radiotracer remain feasible, these issues must be taken into consideration when developing a PET imaging study with this radiotracer. Supported by the National Institute on Drug Abuse.

#### **Endogenous opioid system modulation of motivation circuitry**

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The endogenous opioid system, together with dopaminergic circuits, is emerging as a principal site of action of most drugs of abuse, including alcohol, opiates, psychostimulants and marihuana. Within the 3 receptor types involved in opioid neurotransmission, the  $\mu$ -opioid receptor has been the best studied in humans. Using external imaging with positron emission tomography and selective radiotracers, studies in healthy humans have shown that there is substantial interindividual variation in the function of this neurotransmitter system, both in the *in vivo* availability of the receptors, as well as in the release of opioid peptides (e.g.,  $\beta$ -endorphin, enkephalins, endomorphins) interacting with the  $\mu$  receptor. In response to a stressful challenge,



variations in the concentration of receptors and in the magnitude of neurotransmitter release have been linked to the capacity to regulate the stressful experience. These variations have been linked to specific genetic polymorphisms (e.g., COMT val158met) enriched in substance abusing samples, suggesting that they may underlie variations in the propensity to use drugs and the development of addictions. For example, and in healthy subjects, trait impulsiveness was highly associated with resting and stress-induced  $\mu$ -opioid system functional measures in the medial and orbitofrontal cortex, anterior cingulate, thalamus, nucleus accumbens and amygdala, accounting for up to 50% of the variance in that personality trait. Patient groups that present high levels of comorbidity with the addictions, such as borderline personality disorder, also present similar alterations in the function of this neurotransmitter system even in the absence of a frank diagnosis of drug dependence. Last, variations in the function of  $\mu$ -opioid receptors also appear to impact on other neurotransmitter systems, such as the dopaminergic. A common genetic polymorphism in the  $\mu$ -opioid receptor gene was associated with greater dopaminergic responses to nicotine in tobacco smokers. These data suggest that variation in this neurotransmitter system is implicated in both risk for the addictions and variation in the neural effects to substances of abuse. Supported by grants R01 DA016423, R01 DA027494, R21 DA027066, and R21 MH 069612

## **BUPRENORPHINE**

### **The unique pharmacology of buprenorphine**

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Since its introduction into clinical medicine in the 1970's in the U.K., buprenorphine has been much studied for its unique pharmacology; properties that have lead to its successful introduction into the opiate abuse medication armamentarium, but properties that still remain to be fully explained. Important assets of buprenorphine include its low rate of dissociation from the  $\mu$ -opioid (MOP) receptor and its profile as a MOP receptor agonist and kappa opioid receptor antagonist; it also has very low delta opioid receptor efficacy. Of special interest has been the bell-shaped dose-response relationship that is observed in many behavioral assays, including antinociception. This means that high doses show less robust effects and a shorter duration of agonist action than lower doses. Whether a bell-shaped dose-response curve is seen for buprenorphine in rodent models of antinociception is dependent on both the dose and timing of drug administration. The phenomenon has most recently been explained by extensive data supporting an antinociceptive action via MOP receptors at low doses and a physiological antagonism by an action at nociceptin/orphanin FQ (NOP) receptors at higher doses. However, this contradicts the fact that in vitro assays buprenorphine has low affinity and low efficacy at NOP receptors. Thus, for example across all brain regions of the rat when assayed using [<sup>35</sup>S]GTPgammaS autoradiography buprenorphine acts only as an antagonist. In addition, earlier findings showed that both the ascending and descending arms of the buprenorphine dose-effect curve are sensitive to naloxone antagonism, suggesting an interaction at classical opioid receptors, and structurally dissimilar opiates that also give a bell-shaped dose-effect curve, such as methoclocinnamox, have even lower affinity for, and efficacy at, NOP receptors. These apparent contradictions suggest we still have a lot to learn about the pharmacology of buprenorphine. Supported by NIDA grant DA04087.

**New ligands from an old friend**

S.M. Husbands, Department of Pharmacy and Pharmacology, University of Bath, Bath, UK

The use of buprenorphine in the treatment of opiate abuse and dependence by detoxification, substitution and maintenance, is the most noteworthy recent addition to the repertoire of methods available for the treatment of substance abuse disorders. In addition to its activity as a mu opioid (MOP) receptor partial agonist, buprenorphine is a kappa/delta (KOP/DOP) receptor antagonist and more recently profiled as a partial agonist at the nociceptin/orphanin FQ (NOP) receptor. It has been postulated that buprenorphine-like ligands with higher NOP receptor activity might have efficacy as non-addicting analgesics and potential drug abuse medications, while buprenorphine-like compounds with lower, or no, MOP receptor efficacy may have utility as relapse prevention agents in the treatment of drug abuse. Control over efficacy at four different receptors is difficult to manage, but notable successes have been achieved within the orvinol series. In the search for MOP/NOP receptor partial agonists, ligands with affinities from 8 nM – 133 nM at NOP receptors were generated (buprenorphine  $K_{iNOP}$  77 nM). Of the compounds with appreciable NOP receptor affinity, efficacy at this receptor ranged from very low (5% of nociceptin) to moderate (58% of nociceptin) with buprenorphine being intermediate in this range (21% of nociceptin). One compound, BU08028, was found to have comparable affinity at opioid and NOP receptors (all between 1.6 – 8.5 nM) and very similar activity to buprenorphine in the [<sup>35</sup>S]GTPgammaS assay, but with higher efficacy (48% of nociceptin) at NOP receptors. In the search for NOP partial agonists with antagonist activity at MOP and KOP receptors, ligands have been developed with the desired profile in vitro. The further evaluation of these ligands, including initial in vivo evaluations, will be presented and the recent developments in our understanding of structure-activity relationships in this remarkable series discussed. This work was supported by NIDA grants DA020469 & DA007315 (SMH) and DA023281 (L. Toll).

**Buprenorphine: a novel receptor target and mechanism of action**

S. Grinnell, S. Majumdar, Y.-X. Pan and G.W. Pasternak, Molecular Pharmacology and Chemistry Program and the Department of Neurology, Memorial Sloan-Kettering Cancer Center, New York, NY, USA

Buprenorphine is a potent analgesic whose use is becoming increasingly widespread, due in part to a number of advantages over traditional mu opioids. However, a number of features of this agent have raised questions regarding its mechanism of action. It is often considered a partial mu agonist. Yet, it also has high affinity for other classes as well. Interestingly, it has a methyl-c-propyl substituent on the nitrogen, similar to naltrexone, but still remains an analgesic. Furthermore, many investigators have suggested that its actions are less easily reversed by the potent opioid antagonist naloxone. These observations led us to examine its mechanism of action. In our hands, buprenorphine is a potent analgesic. However, in a MOR-1 knockout model in which exon 11 and its associated splice variants are eliminated, buprenorphine shows no analgesic actions at doses many fold higher than its normal ED<sub>50</sub>. This contrasts with morphine and methadone which retain full analgesic activity in these same exon 11 knockout mice.

Although there are several exon 11-associated variants of the mu opioid receptor Oprm1 that predict full length, 7 transmembrane receptors, most predict truncated variants containing only 6 TM domains. Evidence from our group suggests that these truncated variants offer a unique target in the design of opioid analgesics and our current results suggest that much of the analgesic actions of buprenorphine can be attributed to these new targets, explaining much of the overall pharmacology. Supported by grants from the National Institute on Drug Abuse (DA02615, DA06241, DA07242) to GWP and a core grant from the NCI (CA08748) to MSKCC.

**Abuse liability of buprenorphine in humans under various states of opioid physical dependence**

S.D. Comer, M.A. Sullivan, S.K. Vosburg, J.M. Manubay, Z.D. Cooper, and J.D. Jones, NYSPI and Columbia University, New York, NY, USA

The abuse potential of buprenorphine (bup) as well as buprenorphine/naloxone (bup/nx) is unclear given the unique pharmacology of bup. Therefore, we conducted a series of studies to assess the abuse potential of bup and bup/nx under various states of opioid physical dependence. Heroin-dependent volunteers, who lived in the hospital for the duration of the studies, were given the opportunity to work for either drug or money using a progressive ratio self-administration procedure. None of the participants were interested in treatment for their drug use and were paid for their participation. The volunteers were detoxified from heroin, maintained on morphine, or maintained on sublingual bup. During a sample session, participants received \$20 and a dose of the test drug. During a subsequent choice session, participants could work for the test drug or money they had sampled by making finger press responses. In recently detoxified individuals, bup was self-administered as much as methadone and ratings of drug liking were similar for bup and methadone. When bup was compared to bup/nx in recently detoxified individuals, both drugs were self-administered at the same levels. However, ratings of liking for bup/nx were not different from saline. Instead, participants reported that they self-administered bup/nx because it alleviated mild withdrawal. In morphine-maintained participants, bup alone increased both positive and negative subjective effects, but it was not self-administered at any dose that was tested. In bup-maintained individuals, self-administration of bup/nx was lower than bup alone and heroin. Drug liking and desire to take the drug again also were lower for bup/nx. Consistent with its partial agonist profile, the abuse liability of bup varied depending on the state of opioid physical dependence. The addition of naloxone further reduced the abuse liability of bup under the various experimental conditions. Supported by NIDA (DA09236, DA10909), Schering-Plough, and Reckitt Benckiser.

**To mix or not to mix: modulation of opioid activity by nociceptin receptor ligands**

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Nociceptin/orphaninFQ via its cognate receptor NOP, modulates several opioid-mediated actions, particularly in reward and nociceptive pathways. We have hypothesized that modulation of opioid activity by NOP ligands could lead to non-addicting analgesics and drug abuse medications. To investigate this hypothesis for therapeutic development, we designed bifunctional NOP/mu-opioid receptor ligands that have varying selectivity and

functional efficacy at both these receptors. These compounds were evaluated in a mouse thermal antinociception assay, and in the mouse conditioned place preference paradigm (CPP) against morphine. Our results showed that a NOP/MOP agonist showed significant MOP-mediated analgesia, but NOP agonist efficacy, and preferably NOP selectivity, was required to attenuate the MOP-mediated reward in the same molecule or morphine-induced CPP, when co-administered with morphine. On the other hand, a NOP full agonist with low or negligible efficacy at MOP, attenuated morphine CPP and had no CPP on its own. Our recent studies with buprenorphine, a MOP partial agonist, which has low affinity and efficacy at NOP, showed that its NOP agonist activity can attenuate its MOP-mediated antinociceptive potency, particularly at higher doses, leading to its well-noted inverted U-shaped dose response curve for antinociception. However, buprenorphine induces a place preference in the CPP paradigm, indicating that its low NOP efficacy and selectivity does not attenuate its rewarding effects. It appears therefore, that a bifunctional NOP/MOP agonist profile with a higher balance of NOP selectivity and efficacy, may be suitable as a non-addicting analgesic, whereas full NOP agonist activity is required to attenuate the rewarding effects of opioids. The effect on other opioid-mediated actions such as locomotion and opioid tolerance is still under investigation, and will likely play a role in the therapeutic application of such multitargeted compounds. Supported by grants DA14026, DA027811(NZ) and DA023281(LT).

#### **Therapeutic potential of NOP ligands as spinal analgesics**

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Itch/pruritus is the most common side effect derived from spinal administration of mu opioid receptor (MOP) agonists. Given that intrathecal administration of morphine dose-dependently produces antinociception with simultaneous itch/scratching responses in monkeys, this non-human primate model provides a valuable tool to identify a viable target as spinal analgesics. The nociceptin/orphanin FQ (N/OFQ) receptor (NOP) is defined as the 4<sup>th</sup> member within the opioid receptor family. Although the actions of N/OFQ have much in common with those of classical opioids at the cellular level, the in vivo pharmacological profiles of N/OFQ and NOP-related ligands are not fully known in primates. This presentation provides an overview of recent studies of NOP- and MOP-related ligands in rhesus monkeys. First, intrathecal N/OFQ over a wide dose range produced antinociception without hyperalgesia, scratching, sedation, and muscle relaxation. In contrast, intrathecal MOP agonists such as morphine and DAMGO produced antinociception with profound scratching. When N/OFQ was combined with morphine intrathecally, this combination produced greater antinociceptive effect. Second, Ro 64-6198, a nonpeptidic NOP agonist, produced antinociceptive effects that are independent of MOP. Like the MOP agonist alfentanil, systemic Ro 64-6198 produced morphine-comparable antinociception. Unlike alfentanil, Ro 64-6198 did not produce reinforcing, respiratory depressant, or pruritic effects. Intrathecal Ro 64-6198 also produced NOP-mediated antinociception. Third, intrathecal UFP-112, a chemical modification of N/OFQ, produced long-lasting antinociception against acute noxious stimulus and capsaicin-induced allodynia. Antinociceptive effects of UFP-112 were antagonized by the NOP antagonist, J-113397, but not by the MOP antagonist,

naltrexone. In addition, intrathecal combination of inactive doses of UFP-112 and morphine significantly produced antinociception. Taken together, these findings strongly support the therapeutic potential of NOP agonists as spinal analgesics. Supported by U.S. Dept of Defense, Grant W81XWH-07-1-0162.

**The Nociceptin/Orphanin FQ system, as a treatment target for addiction.**

R. Ciccocioppo, School of Pharmacy, Pharmacology Unit, University of Camerino, Italy. Nociceptin/orphanin FQ (N/OFQ), the endogenous ligand of the NOP receptor, previously referred to as opioid receptor-like1 (ORL1) receptor, is a 17 aminoacid neuropeptide structurally related to the opioid peptide dynorphin A. From a functional point of view, N/OFQ possesses antiopioid properties and, acting as a presynaptic neuron inhibitor, it is able to control dopaminergic, noradrenergic and glutamatergic neurotransmission in different brain sites. In addition, it has been shown that N/OFQ possesses marked anxiolytic and anti-stress properties presumably mediated by its ability to blunt extrahypothalamic corticotropin releasing factor (CRF) activity. Altogether, these findings point at the N/OFQ–NOP receptor as a system potentially involved in the regulation of reward and drug abuse processes. Indeed, several studies demonstrate that activation of this system results in reduction of the rewarding properties of ethanol, morphine and cocaine. Recent rodent data suggest also that central administration of N/OFQ reduces reinstatement of alcohol-seeking behavior elicited by stress and by environmental conditioning factors. Buprenorphine has long been in clinical use for treatment of moderate-to-severe pain and its use for maintenance treatment of heroin dependence has been approved in several countries. This drug has long been known to be a partial agonist at m-opioid receptors but has also antagonistic or agonistic properties at k and d opioid receptors. In an unexpected development, it has recently been realized that buprenorphine also is agonist/partial agonist at the NOP receptors. Consistent with these findings we found that in rats this drug reduces excessive alcohol drinking via activation of NOP receptors. Based on these data we suggest that NOP receptors may represent a suitable target for addiction treatment development. Support: NIH/NIAAA grant AA014351.

**Discovery and development of nociceptin receptor agonists in alcohol dependence**

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Alcohol dependence and abuse represents a considerable health and economic burden on society with available pharmacotherapies demonstrating insufficient efficacy. We designed novel, potent, and selective NOP agonists as tools for research on alcohol dependence with potential as clinically effective therapeutic agents. Currently available NOP small molecule agonists all have some mu or kappa opioid receptor activity,

limiting their usefulness as research tools. Our unpublished data show several promising novel molecules that are selective for the nociceptin receptor over the mu and kappa opioid receptors. Our molecules have been tested for in vitro activity and pharmacokinetic parameters. While our compounds are not orally bioavailable, they do show a high brain penetrance, and long half life in vivo. Our compounds also act in the central amygdala to reduce an ethanol dependant increase in GABA transmission. Finally, in animal models of hangover anxiety, our compounds show promising results that suggest some potential for future clinical translation. These studies were supported by NIH/NIAAA grant 5R01AA017943-02.

### *SEX DIFFS PAIN*

#### **Gender differences in pain**

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Although age- and sex-specific prevalence patterns differ for different pain conditions, prevalence rates of most common chronic pain conditions are higher in women than in men. For example, in population-based studies of adults, female:male ratios for headache, neck, shoulder, knee and back pain average around 1.5:1; for orofacial pains, ratios are about 2:1; for migraine headache, 2.5:1; and for fibromyalgia the ratio is over 4:1. Women are also more likely than men to experience multiple pains simultaneously. Having multiple pain problems (as opposed to a single pain condition) is associated with higher levels of disability and psychological distress, as well as higher risk of onset for new pain conditions. Differences in pain prevalence in men and women could be due to biological sex differences in nociceptive or perceptual mechanisms or to gender differences in pain appraisal, pain behavior or social roles. The gonadal hormone estrogen clearly plays a role in some pain conditions in women (migraine headache, temporomandibular pain). For other pain problems, evidence of hormonal involvement is less clear. However, rates of many pain conditions increase as girls pass through puberty, whereas rates for adolescent boys are stable or rise less steeply than for girls. Pain-related behavior differs by gender; women are more likely than men to seek health care for pain, resulting in a high proportion of women in many pain treatment settings. The higher rate of treatment seeking may in part be due to the fact that pain is more often severe for women than for men. Women's higher pain intensity also seems to be a major factor influencing clinicians' treatment decisions, especially prescription of medications for acute pain – although evidence suggests that clinicians' gender stereotypes also play a role in these decisions, independent of the patient's pain level. Women, particularly elderly women, are more likely than men to be prescribed opioid medications for pain and to use opioids long term. Understanding both biological and social contributions to gender differences in pain may help optimize treatment for people of both sexes. Supported by R01AG034181.

#### **Opioid analgesia and sex differences: An overview**

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Although a contribution of sex in opioid efficacy has garnered much attention, the confirmation and direction of any such difference remain elusive. We performed a systematic review of the available literature on sex differences in  $\mu$  and mixed  $\mu/\kappa$  opioid

effect on acute and experimental pain. Fifty unique studies (including three unpublished studies) were included in the analyses. Across the 25 clinical studies on  $\mu$ -opioids there was no significant sex-analgesia association. Restricting the analysis to patient-controlled analgesia (PCA) studies (irrespective of the opioid) yielded greater analgesia in women ( $n=15$ , effect size 0.22, 95% c.i. 0.02-0.42,  $P=0.028$ ). Further restricting the analysis to PCA morphine studies yielded an even greater effect in women ( $n=11$ , effect size=0.36, 95% c.i. 0.17-0.56,  $P=0.003$ ). Meta-regression indicated that the longer the duration of PCA, the difference in effect between the sexes further increased. Across experimental pain studies on  $\mu$ -opioids women had greater antinociception from opioids ( $n=11$ , effect size=0.35; 95% c.i. 0.01-0.69,  $P=0.047$ ), which was predominantly due to 6 morphine studies. Female patients had greater  $\mu/\kappa$  opioid analgesia ( $n=7$ , effect size 0.84; 95% c.i. 0.25-1.43,  $P=0.005$ ), but no sex-analgesia association was present in experimental studies ( $n=7$ ). Sex differences exist in morphine-induced analgesia in both experimental pain studies and clinical PCA studies, with greater morphine efficacy in women. The data on non-morphine  $\mu$  and mixed  $\mu/\kappa$ -opioids are less convincing and require further study.

**Impact of age and sex in the antihyperalgesic actions of morphine: Role of periaqueductal gray**

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Opioid-based narcotics are the most widely prescribed therapeutic agent for the alleviation of persistent pain; however, it is becoming increasingly clear that morphine is significantly less potent in females compared to males. Indeed, studies from our lab using a variety of pain assays, including somatic, visceral and orofacial pain, have consistently shown that females require approximately twice the amount of morphine as a male to produce comparable levels of pain relief. The midbrain periaqueductal gray (PAG), via its descending projections to the rostral ventromedial medulla and the dorsal horn of the spinal cord, is considered an essential neural substrate for opioid-based analgesia. The PAG contains a dense population of mu opioid receptor (MOR) expressing neurons, and we hypothesized that MOR expression in the PAG was sexually dimorphic, and that these sex differences in opioid receptor levels contribute to the observed sex differences in morphine potency. Using a variety of techniques, including immunohistochemistry, western binding and autoradiography, we found that males have significantly higher levels of MOR expression in the ventrolateral PAG compared to cycling females. Inflammatory hyperalgesia induced by intraplantar administration of Complete Freund's Adjuvant (CFA) was significantly reversed in males following direct administration of morphine into the PAG. By contrast, the antihyperalgesic actions of morphine were significantly attenuated in proestrus and estrus females. Additional studies by our lab have shown that selective lesions of MOR-expressing neurons in the ventrolateral PAG significantly reduces the antihyperalgesic effects of systemic morphine in males only, and this reduction was positively correlated with the level of MOR expression in the ventrolateral PAG. Together, our studies suggest that sex differences in PAG MOR expression may provide the biological bases for the observed sexually dimorphic actions of morphine. Funded by NIH grant DA16272.

**The importance of sex in pain; sexual dimorphic expression in spinal cord of  $\mu$ -opioid and kappa-opioid receptor heterodimers.**

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Sexually dimorphic nociception and opioid antinociception has been extensively demonstrated. In particular, the nociceptive vs. antinociceptive consequences of kappa opioid receptor (KOR) activation is sexually dimorphic. Although it has been established for some time that KOR agonists have weaker analgesic activity and produce greater nociception in males vs. females, determinants of the balance between nociceptive and antinociceptive properties of KOR agonists remain largely unknown. My laboratory had demonstrated that the concomitant activation of spinal  $\mu$ -opioid receptors (MOR) and KOR is necessary for spinal morphine antinociception in females, but not males. This sexual dimorphism can be explained by spinal cord expression of a MOR/KOR heterodimer that is vastly more prevalent in the spinal cord of females vs. males. Cross-linking experiments in combination with *in vivo* pharmacological analyses indicate that heterodimeric MOR/KOR utilizes spinal dynorphin 1-17 as a substrate and is likely to be the molecular transducer for the female-specific KOR component of spinal morphine antinociception. The existence of heterodimeric MOR/KOR provides a mechanism for activating spinal KOR-mediated antinociception without the concomitant pro-nociceptive functions that monomeric KOR also subserves. The presence of an ovarian sex steroid-dependent functional interaction of KOR with MOR, suggested by the dependence of MOR/KOR expression on stage of cycle, can explain sexually dimorphic analgesic mechanisms solicited by spinal morphine as well as male female differences in the balance between pro-nociceptive vs. antinociceptive responsiveness to KOR agonists. Supported by R01 DA027663.

*GENETIC MICE*

**Functional characterization of the *OPRM1* A112G SNP in mice**

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A single nucleotide polymorphism (SNP) in the human  $\mu$ -opioid receptor gene (*OPRM1* A118G) has been widely studied for its association in a variety of drug addiction and pain sensitivity phenotypes; however, the extent of these adaptations and the mechanisms underlying these associations remain elusive. To clarify the functional mechanisms linking the A118G SNP to altered phenotypes, we derived a mouse model possessing the equivalent nucleotide substitution (A112G), which corresponds to the same amino acid replacement in the *Oprm1* gene. These mice have alterations in basal and morphine-evoked responses in a variety of behavioral tasks, including nociception, behavioral sensitization and conditioned place preference. Some of these behavioral differences may be explained by reductions in MOR expression levels, however MORs are reduced in a sub-set, but not all, brain regions. Specifically, the levels of MORs in the hippocampus are not different between genotypes. The hippocampus is an ideal structure to evaluate circuit function. Therefore, to investigate if this SNP impacts a functional response in the absence of reduced receptor levels, we utilized voltage-sensitive dye imaging in hippocampal slices before and after MOR stimulation with DAMGO. Utilizing several analytical methodologies, we found significant reductions in DAMGO-mediated



responses in animals with the G112 allele. These data further support claims that this SNP results in a loss of receptor function. Supported by DA-027066.

**The role of OPRM1 variation for alcohol reward examined using a reverse translational approach**

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Purpose: Mu-opioid (OPRM1) receptors are key to rewarding properties of alcohol, and the target for the approved alcoholism medication naltrexone. Based on secondary analyses of clinical trials, A118G variation at the OPRM1 locus has been suggested to moderate therapeutic efficacy of naltrexone, but this notion remains highly controversial. The purpose of the present set of studies was to examine the role of OPRM1 A118G variation for alcohol related behaviors using a reverse-translational approach. Humanized mouse lines carrying the human 118A and 118G variants, respectively, were generated on a C76BL/6 background. Ligand affinity was determined using displacement of [3H]DAMGO in cloned CHO-cells. Distribution, binding density and signaling were determined using autoradiography. A standard behavioral phenotyping battery was carried out. Alcohol-induced DA-release was examined using microdialysis, and alcohol consumption was assessed using two-bottle free-choice drinking. Both humanized receptor variants showed normal ligand affinity, distribution, binding density, and signaling, with no differences by genotype. In the basic behavioral phenotyping battery, 118GG mice were more bold/exploratory than 118AA mice. Similar to our human 11C-raclopride PET data, alcohol-induced DA-release was greater in male 118GG than male 118AA mice. Male, but not female 118GG mice consumed higher amounts of alcohol than 118AA mice of the corresponding sex, in particular at higher alcohol concentrations. The functional OPRM1 118G variant is sufficient to confer greater alcohol-induced DA-release and consumption. These findings are consistent with a role of this variant to predispose human carriers to endorphin-dependent alcoholism, but also to render patients more responsive to opioid antagonist treatment.

**Direct visualization of delta opioid receptor internalization under physiological conditions**

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Drug addiction is a complex disorder involving gradual and long-term adaptations of the brain in response to repeated drug exposure. This entails modifications of neuronal connectivity, signaling and plasticity. In heroin addicts, re-exposure to environmental elements previously associated with heroin abuse induce intense drug craving. Therefore, numerous behavioral studies addressed the impact of environmental cues on drug seeking. We developed a protocol in which morphine was repeatedly administered in a given environment at a dose leading to physical dependence. This paradigm elicited context-induced withdrawal upon re-exposure of drug-free animals and induced

activation of the hippocampus. Using knock-in mice expressing a functional fluorescent delta opioid receptor (DOR-eGFP), we then investigated delta receptor activation and subsequent internalization by fluorescence microscopy to address *in vivo* dynamics of the receptor under physiological conditions. The authors acknowledge NIDA support to the Center for Opioid Receptors and Drugs of Abuse (#DA 005010), ANR, CNRS, INSERM, the University of Strasbourg and the Alsace region.

**Opioids induced cellular and behavioral changes in MOPr phosphorylation-deficient (PD) mice**

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Acute or chronic opioid treatment produces major behavioral responses. Upon exposure to agonists, MOPr undergoes phosphorylation in cultured cells, which is related to desensitization and internalization. To assess contributions of *in vivo* MOPr phosphorylation to regulation of opioid induced behaviors, we have generated a knockin mouse with the putative key phosphorylation residue T349 in MOPr mutated to alanine. Our study revealed that the MOPr -phosphorylation deficient (PD) mice displayed interesting phenotypes at both behavioral and cellular levels. MOPr -PD mice showed attenuated acute tolerance to morphine and etorphine-induced analgesia and different withdrawal responses compared with their wild type littermates. At cellular levels, MOPr internalization in the spinal cord following systemic etorphine was diminished in the MOPr-PD mice. 2D DIGE analysis of the brain tissue from the MOPr-PD mice will provide a further insight regarding the role of receptor phosphorylation for the actions of different opioids. Therefore, the MOPr-PD mice serve as a unique animal model to validate and more importantly extend our understanding of regulation of MOPr functions by opioid drugs from cellular models to whole animals. [supported by NIH grants DA011925 to JBW and DA17302 to LYLC]

**Dynorphins regulate the intensity of fear memory: from mice to men**

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The formation of fear memories and their extinction are necessary for the adaptation to a changing environment. Here with a translational approach we investigated the role of dynorphins in the dynamic change in fear memories in mice and in humans. In mice, genetic deletion of the dynorphin encoding gene *Pdyn* in mice resulted in enhanced cue-dependent fear conditioning, as well as delayed extinction in contextual and cue conditioning/extinction paradigms. The pharmacological blockade of kappa opioid receptors produced a similar effect on fear extinction as the dynorphin deletion. The behavioral data are supported by the analysis of the induction of the immediate early gene *c-fos*, which demonstrated that the absence of dynorphin results in reduced neuronal activity in key limbic structures during extinction. Translating these findings into the human domain, we could demonstrate that a polymorphism in the dynorphin encoding gene *Pdyn* impacts the activity of the amygdala, functional coupling between amygdala

and the prefrontal cortex and the intensity of stress responses during extinction. Our findings establish a role of Pdyn/KOR signaling in fear extinction and suggest a biological mechanism for the success of trauma exposure therapy.

## **DELTA**

### **Dual efficacy of DOR subtype selective ligands for ethanol consumption and its side effects of withdrawal-induced anxiety and hyperalgesia**

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A strong co-morbidity exists between alcoholism and anxiety disorders. Indeed, alcohol withdrawal-induced anxiety is a primary contributing factor for relapse, and anxiolytics are a common adjuvant therapy prescribed for treatment-seeking alcoholics. Treatment for anxiety disorders and alcoholism exist but are not universally effective. The delta opioid receptor (DOR) has been shown to play a role in both alcohol consumption and anxiety in preclinical animal models making it a very interesting clinical target. Although, there is only one gene that encodes the DOR, there are two distinct pharmacologically-defined subtypes of DOR, DOR1 and DOR2, *in vivo*. Importantly, we have found that DOR1- and DOR2-selective ligands have opposing effects on ethanol consumption. Specifically, DOR1 agonists and DOR2 antagonists decrease drinking while DOR2 agonists increase drinking and non-selective ligands produce no effect. If the DOR subtypes have opposing effects on anxiety and pain as well, targeting the “wrong” DOR subtype may be ineffective or may actually exacerbate withdrawal and relapse. Another key observation regarding the DOR is the dynamic regulation of its location in the cell. In naïve animals, many DORs are stored in large dense core vesicles beneath the plasma membrane. Importantly, functional DORs are translocated from intracellular compartments to the cell surface in response to multiple external stimuli, including chronic stress, inflammatory pain, morphine treatment and, as we and others have recently shown, after chronic alcohol exposure as well. However, the functional relevance of these “unmasked” DORs to anxiety, pain and ethanol consumption remains unknown. Here we will report the changes in responsiveness to DOR subtype-selective drugs that occur during chronic voluntary ethanol consumption. Supported by Department of Defense Grant DAMD62-10-5-071 (JLW), NIAAA Center Grant AA017072-01, NIDA Grants DA015232, DA019958 (JLW), and the State of California funds for medical research on alcohol and substance abuse through the UCSF.

### **Inhibition of human multiple myeloma cell proliferation by naltrindole**

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The antiproliferative activity of naltrindole (Nti), a delta opioid receptor (DOR) antagonist, toward human multiple myeloma (MM) cells was evaluated. Nti inhibits the mixed lymphocyte reaction *in vitro*, and blocks graft rejection *in vivo*. Based on its immunosuppressive properties we tested Nti's effect on proliferation of MM cells. MM is an invasive plasma cell neoplasm responsible for 10% of all hematological malignancies. Nti inhibited the proliferation of human MM cell lines with an EC<sub>50</sub> of 20 µM, whereas other human cells lines were substantially less sensitive. To mimic the bone marrow environment localization of MM cells, co-culture of MM cells with bone

marrow stromal cells did not affect the antiproliferative activity of Nti. [ $^3\text{H}$ ]-Nti exhibits saturable, low affinity binding to intact MM cells and the pharmacological properties of the Nti binding site differ significantly from those of the DOR, suggesting that Nti inhibits proliferation of MM cells through a non-opioid receptor mechanism. RT-PCR assays confirmed the lack of delta, kappa and mu receptor mRNA in MM cells. The identity of the naltrindole binding site is currently under investigation. Nti does not induce apoptosis in MM cells, based on FACS analysis and caspase cleavage assays, but decreases the rate of cell division. While investigating the mechanism of action of Nti, we found that it increases intracellular calcium levels in MM cells, and the calcium appears to be released from the endoplasmic reticulum, based on inhibition of the response following thapsigargin treatment. This effect is specific to Nti as other opioids such as naltrexone and morphine do not affect the levels of calcium in MM cells, nor do they block the activity of Nti. Based on the anti-proliferative activity of Nti toward MM cell lines, an in vivo study was conducted. Nti injected IP daily at 30mg/kg significantly decreased tumor volumes in a murine SCID/human RPMI 8226 xenograft model over a 39-day period compared with saline injected controls. Further studies on Nti as a potential therapeutic agent for the treatment of human MM are warranted.

**Delta agonist glycopeptides: CNS active drugs from endogenous neuropeptides**

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Glycosylation methods developed in the Polt lab have led to a number of stable and systemically available glycopeptide drug candidates have been synthesized and purified on large scale. Key to greater stability, increased bioavailability and enhanced penetration of the blood-brain barrier (BBB) is the *biousian* activity of the glycopeptides. Essential to this concept is the notion that the glycopeptides can adopt two different conformational ensembles: a water-soluble random coil ensemble with a diverse range of backbone conformations, and a more restrictive membrane-bound ensemble of conformations that allows the glycopeptide to participate in membrane transport processes that ultimately lead to BBB penetration. Short enkephalin-derived glycopeptide drugs have been studied as analgesics. Three distinct classes of the enkephalins have been developed: mu-selective opiate agonists, delta-selective opiate agonists, and mixed mu/delta agonists. All of these morphine substitutes have a high potential for translation to the clinic, and a company has been formed to commercialize their application. Endorphin/Dynorphin-derived helical glycopeptides have been explored. While these glycopeptides have a much higher M.W. than the shorter enkephalins (~2500 vs ~1000), their apparent penetration of the BBB is much better. Amphipathic helices are used to achieve *biousian* behavior. Circular dichroism (CD), NMR and computational methods have been used to provide important biophysical information to aid in the design of these drugs. While we are still working on a more complete understanding of this new class of drugs, it seems clear that we can obtain analgesics that are potent at 600 µg/kilo, and recent studies show that the *biousian* approach is not limited to opioid peptides. Support: Office of Naval Research (N00014-05-1-0807 & N00014-02-1-0471), the

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**Delta opioid receptor agonists in Parkinson's disease: a reappraisal**

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The delta opioid peptide (DOP) receptor has been considered a target in Parkinson's disease (PD) based on evidence of plasticity of DOP transmission in the parkinsonian brain, and symptomatic efficacy of DOP receptor ligands in models of parkinsonism and levodopa-induced dyskinesia. In contrast to the commonly belief that DOP receptor agonists act by reinforcing enkephalinergic transmission in globus pallidus, we proved that the site of their antiparkinsonian action is the substantia nigra reticulata (SNr) where they overinhibit the nigro-thalamic pathway at doses effective in attenuating parkinsonian-like symptoms (Mabrouk et al., 2008, 2009). Since nociceptin/orphanin FQ peptide (NOP) receptor antagonists also act in SNr (Marti et al., 2007), we investigated whether both drug classes synergize in attenuating parkinsonism. Combined administration of subthreshold doses of the DOP agonist SNC-80 and the NOP antagonist J-113397 synergistically attenuated motor deficits in 6-OHDA hemilesioned rats. Microdialysis coupled to behavioral testing revealed that the synergism took place in SNr and was associated with synergistic overinhibition of the nigro-thalamic projection. SNC-80 and J-113397 also synergistically reversed MPTP-induced motor impairment in mice. This effect was maintained over a subacute course of administration, and was not accompanied by sparing of dopaminergic terminals in striatum (i.e. neuroprotection). To finally prove the cross-talk between DOP and NOP receptor signaling in vivo, SNC-80 promoted motor behavior more potently in NOP receptor knockout than wild-type mice. These data add to previous evidence of antiparkinsonian efficacy of DOP receptor agonists, suggesting that the combination of low doses of a DOP agonist and a NOP antagonist may provide sustained therapeutic benefit to PD patients. Mabrouk OS, et al. (2008) *J Neurochem* 107, 1647-1659; Mabrouk OS, et al. (2009) *Neuroscience* 164, 360-369; Marti M, et al. (2007) *J Neurosci* 27, 1297-1307. Supported by a FIRB Internazionalizzazione grant n. RBIN047W33.

**KAPPA**

**Natural product derived KOP ligands as novel treatments for drug abuse**

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Natural products have played an important role in the development of medications for a number of diseases. However, the search for natural products with utility in the treatment of drug abuse is an area much less developed than the search for anticancer or anti-infective agents. Investigation of psychoactive natural products, such as salvinorin A, provides an opportunity to identify novel scaffolds and selective agents to better characterize known receptor types and study their role in drug abuse. It is relatively rare for natural products to have sufficiently attractive ADME/Tox (Absorption, Disposition, Metabolism, Excretion, and Toxicity) properties to be marketable, despite their excellent potency and selectivity. Thus, the ability to improve these properties by semi- or total synthetic chemistry is important in drug seeking campaigns. A growing amount of

evidence suggests that kappa opioid (KOP) receptors are involved in the abuse related effects of CNS stimulants. KOP receptor agonists have been shown to modulate the activity of dopamine neurons and decrease self-administration of cocaine in non-human primates, while KOP receptor antagonists have the potential to be utilized as opioid abuse therapies and in the treatment of stress-induced reinstatement (a model of drug relapse). As part of our continuing efforts toward developing effective natural product based drug abuse therapies, we report the synthesis and biological characterization of unique semisynthetic analogues of salvinorin A. These agents provide a better understanding of the structure-activity relationships of this unique KOP agonist. This information can then be used to aid in the development of KOP based drug abuse therapeutics with enhanced pharmacological properties. Supported by DA018151 and DA018151S1.

#### **High throughput *in vivo* screening for the identification of novel analgesics**

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Typical compound screening used to identify potential drug candidates typically yields compounds that do not have desired drug like properties. Thus identified compounds found in this traditional manner have a high inherent rate of attrition in the later stages of drug development as evidenced by poor *in vivo* activity. One approach to circumvent this high attrition rate would be to directly use phenotypic *in vivo* models in the discovery phase to identify enhanced hits with desired biological profiles. Our working hypothesis is that the direct use of mixture-based combinatorial libraries for *in vivo* testing offers a unique opportunity to carry out successful preliminary studies in which 10s to 100s of thousands of compounds can be used in translational *in vivo* assays. Two studies will be presented involving the mouse tail flick test (8 animals per time point; times tested were 30 minutes, 1.0 hours, 2.0 hours, 3.5 hours, 5.0 hours, 8.0 hours and 24.0 hours; differences in mixture results were carried out by summing the area under the curve) of a tetra-peptide library which contains Dmt-DALDA as an internal control (the library in total is made up of 17,850,625 peptides with each mixture composed of 274,625 peptides—these were successfully tested at 25 and 5 mgs/kg). Additionally, a classic small molecule library was tested in the same tail flick assay (this library is made up of a total of 738,192 compounds; the single position defined mixtures were made up of 17-28,000 compounds each and were tested by IP administration at 5mgs/kg). The initial results of these studies were published in the AAPS Journal, 8 (2) E371-382, 2006 and AAPS Journal, 12 (3), p. 318-329. These results lead us to conclude that the direct *in vivo* screening of mixture-based libraries can yield highly active individual compounds having enhanced desired activity. These approaches can be utilized to identify mu, delta and kappa specific analgesics. The breadth and implication of these approaches will be discussed. Funded in part by NIDA R21DA 019620 (to RAH).

#### **Kappa opioid receptor ligands and development of antipruritic agents**

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Itch, for so long an orphan symptom of several systemic diseases, is in the news. It is a unique sensory modality that is closely related to, yet distinct from, pain. Recently, two high profile papers from Dr. Chen's lab at Washington University in St. Louis have

raised the possibility of spinal gastrin-releasing peptide serving as a common itch neurotransmitter by relaying information to the somatosensory cortex in response to an array of pruritic stimuli, at least in mice. Chemicals selected to precipitate the particular behavior measured – compulsive scratching of the neck with hindlegs–included chloroquine and compound 48/80. We have found that 5'-guanidinonaltrindole (GNTI), a standard kappa opioid receptor antagonist, also provokes the same frenzied, repetitive scratching when injected s.c. behind the neck in male Swiss Webster mice. Might this be a useful animal model in developing structure-activity data on potential antipruritic agents? What are the alternatives? GNTI-induced scratching is dose-related (0.03-1 mg/kg), stable across at least 30 minutes, and mimicked by the less potent and less efficacious norbinaltorphimine. Critically, either s.c. pre-treatment (0.001-0.03 mg/kg) or post-treatment (0.01-0.03 mg/kg) with nalfurafine, a kappa agonist, attenuates the scratching caused by a standard dose of GNTI (0.3 mg/kg, s.c.). This is an important link to clinical pharmacology since nalfurafine is the first kappa opioid agonist to survive in the commercial arena (against pruritus in hemodialysis patients, in Japan). Our current research is focusing on the relationship between peripherally restricted kappa agonists and the suppression of scratch in mice. We call attention to the anti-scratch properties of asimadoline, an arylacetamide kappa agonist with limited CNS penetration, which is being developed by Tioga/Ono against diarrhea-predominant irritable bowel syndrome. This agent possesses dose-related anti-scratch activity against compound 48/80 and GNTI models of itch in mice. These promising results may hasten the formulation of asimadoline, or like compounds, as skin-directed antipruritics. (DA013429)

#### **Disruption of kappa-opioid receptor function attenuates behavioral effects of stress in rodents**

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Stress can induce profound changes in the brain that have immediate and long-lasting effects on behavior. We have shown that various stressors activate the transcription factor CREB in the nucleus accumbens (NAS). Using viral vectors, we have shown that elevated CREB activity in the NAS causes signs characteristic of depression (anhedonia) and anxiety (resistance to extinction of fear), producing a phenotype similar to that seen in people with post-traumatic stress disorder (PTSD). In contrast, disruption of CREB activity in the NAS has antidepressant-like effects. The mechanism of these effects is unknown, but may involve multiple factors. As one example, CREB may produce these effects by regulating the firing rate of NAS neurons that provide feedback inhibition of mesolimbic dopamine neurons, which in turn send projections to areas more classically implicated in stress responsiveness (amygdala, prefrontal cortex). CREB regulation of dynorphin, an endogenous ligand at KOR receptors, may play a key role in this process. CREB-induced elevation of dynorphin tone leads to increases in the stimulation of KORs located on mesolimbic dopamine neurons, thereby decreasing activity of this system. In support of this model, we now have considerable data indicating that blockade of KORs can prevent, attenuate, and reverse stress effects on behavior. KOR antagonists produce antidepressant-like effects in the forced swim test, regardless of whether they are given before or after exposure to stress. Likewise, KOR antagonists have anxiolytic-like effects in the elevated plus maze, and administration of these drugs before fear

conditioning can prevent the development of PTSD-like changes in behavior. We have new data indicating that KOR antagonists reduce the disruptive effects of stress on attention in rats, as reflected by performance in the 5-choice serial reaction time task. Collectively, these data suggest that KOR antagonists might be particularly useful for producing protective effects in cases where it is possible to predict when stress will occur. Support: MH063266

**Discovery and development of selective kappa opioid receptor antagonists**

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Stress can induce despair and increase the risk of clinical depression and drug abuse. Dynorphin, the endogenous ligand for the kappa-opioid receptor, is a stress-related neuropeptide in the brain that may mediate these responses. Activation of the kappa-opioid receptor causes place aversion in rodents and dysphoria in humans. The dynorphin/kappa-opioid receptor system is thought to be critical for stress-induced depression-like behaviors and reinstatement to drug-seeking behavior. Since kappa-opioid receptor activation contributes to stress-induced behavior, there is considerable interest in selective kappa-opioid receptor antagonists that possess drug-like properties. Studies from our laboratory led to the identification of JDTC as a potent, selective, orally active kappa-opioid receptor antagonist as a potential pharmacotherapy for treatment of depression, anxiety, and addiction (cocaine, alcohol, nicotine, and heroin). Several JDTC analogs have been identified that have in vitro efficacy similar to that of JDTC. The in vitro efficacy, pharmacokinetic properties, and potencies as an antagonist of U50,488-induced diuresis in rats will be presented. This research was supported by NIDA grant DA09045.

**MOR PROTEINS**

**RGS9-2 actions in the Nucleus Accumbens modulate opiate addiction and analgesia**

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The signaling modulator RGS9-2 plays a potent role in dopaminergic and opioidergic transmission in the striatum via actions as a GTPase accelerating protein or as effector antagonist for the G protein alpha subunit. Evidence so far points to RGS9-2 as a potent modulator of antiparkinsonian, antipsychotic, psychostimulant and opiate drug actions. In this study we use genetically modified mice to further understand the role of RGS9-2 in addiction, analgesia and depression like behaviors associated with chronic pain or with long term exposure to opiates. Our results suggest that increased activity of RGS9-2 in the nucleus accumbens (NAc) following stereotaxic infection with an adeno associated virus-RGS9-2 construct blocks the rewarding and locomotor sensitizing actions of morphine and leads to a milder opiate withdrawal syndrome. Interestingly, manipulation of RGS9-2 levels in the NAc also affects analgesic tolerance to morphine. We examined changes in RGS9-2 complexes in the NAc following acute and chronic exposure to morphine and we identified changes in the composition of these complexes associated with morphine tolerance. We also examined the way RGS9-2 affects the actions of agents used to alleviate chronic pain symptoms. Using a neuropathic pain model (spared nerve injury) we show that mice lacking the Rgs9 gene develop tolerance to the



antiallodynic actions of morphine much later than their wild type controls, and that they are more sensitive to the antiallodynic actions of tricyclic antidepressants. Tricyclic antidepressants may also improve depression like behaviors associated with chronic pain in the mutant mice at lower doses than those required for their wild type controls. This phenotype is related to RGS9-2 actions in the NAc as it can be rescued by local overexpression of the protein. Our findings provide new insights into the cellular mechanisms of opiate and antidepressant drug actions and suggest that interventions in the formation of RGS9-2 complexes may be used to improve treatment efficiency. Funding was provided by the Greek Secretariat for Research and Technology (PENED03/860)

**In vivo evidence for the role of PKC and other intracellular molecules in opioid tolerance** W. L. Dewey<sup>1</sup>, H. Akbarali<sup>1</sup>, and G. Henderson<sup>2</sup>, <sup>1</sup>Dept. of Pharm. and Tox. Virginia Commonwealth University, Richmond, Virginia, USA, <sup>2</sup>Dept. Pharm. Univ. Bristol, U. K.

We hypothesize that the differences in the rate and level of tolerance development might well be due to differences in the effects of chronic mu receptor stimulation on intracellular signaling mechanisms. Recent history has shown that receptor phosphorylation which causes a desensitization and encapsulation of the receptor are both seen after chronic administration of mu opioid receptor agonists and have considerable acceptance as important properties of chronic opioid exposure that leads to tolerance. We have found in whole animal experiments that inhibitors of PKC and inhibitors of PKA both reverse but do not inhibit the development of tolerance to moderately efficacious opioids such as morphine. Neither of these specific kinase inhibitors reversed the tolerance produced by the highly efficacious opioid DAMGO. A combination of the doses of each inhibitor that reversed morphine tolerance when given together did not reverse the tolerance to DAMGO. Further studies with specific inhibitors showed that the gamma, alpha and to a lesser extent the epsilon isomer of PKC are involved in this effect. The studies with the PKC inhibitors were confirmed in electrophysiological experiments in isolate LC neurons. On the other hand GRK inhibitors were found not to alter tolerance to these moderately efficacious opioids but completely reversed tolerance to the highly efficacious opioid DAMGO. We conclude from these and related studies that opioid agonists induce tolerance by different mechanisms, that receptor desensitization plays a major role in both cellular and in vivo tolerance and high efficacy agonists induce tolerance independent of PKC but involve G protein-coupled receptor kinases. In addition we will present recently obtained evidence to suggest that the differentiation in the rate of the development and level of tolerance achieved depends on the role of other intracellular molecules. This work was supported by grants from NIDA.

**CaMKII in opioid tolerance and opioid-induced hyperalgesia**

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Ca<sup>2+</sup>/calmodulin dependent protein kinase II (CaMKII) is a multifunctional, Ca<sup>2+</sup>/calmodulin-activated protein kinase. CaMKII is co-localized with the mu opioids receptor (MOR) in the spinal cord and dorsal root ganglion neurons. Not only does MOR

contain predicted sequence that can be phosphorylated by CaMKII, desensitization of MOR was modulated by CaMKII in cellular models. In several rodent models of opioids tolerance, inhibition of CaMKII by chemical inhibitors, siRNA, or gene-mutation effectively prevented the development of, or reversed the established, tolerance to morphine. These effects correlated well with the biochemical evidence that tracked CaMKII activity. Taken together, these data strongly implicate a critical role of CaMKII in opioids tolerance. Similarly, we found that CaMKII appeared to be essential for the development of opioid-induced hyperalgesia, a phenomenon that is highly relevant for opioids tolerance. The talk will further present evidence for potential mechanisms that may synchronize the action of CaMKII and other kinases in opioid tolerance. Supported by NIH grants DA000505, HL098141, & AT003647

## **Mu opioid regulation by beta-arrestins and implications for drug development.**

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The mu opioid receptor (MOR), like most G protein-coupled receptors, interacts with beta-arrestins (Barrestins) upon agonist stimulation. Barrestins (Barrestins 1 and 2) are intracellular scaffolding proteins that can serve to disrupt receptor-protein signaling scaffolds or facilitate such interactions. The degree of interaction between these two proteins can be influenced by the chemical composition of the ligand. Using Barrestin-2 KO mice, our laboratory has studied this protein's contributions to MOR-mediated biological responses. We have found that in the absence of Barrestin2, morphine analgesia is enhanced and tolerance is attenuated suggesting that Barrestin2 plays a role in dampening signaling transduction events leading to antinociception. Other morphine-mediated behavioral responses, including dependence (as assessed by antagonist-induced withdrawal), respiratory suppression and constipation are attenuated in this animal model suggesting that Barrestin2 may play a facilitatory role in the signaling underlying these responses. The work presented here further examines the role of individual Barrestins in the regulation of the mOR, including the contribution to ubiquitination and resensitization, of the MOR. Early developments in our drug discovery efforts to generate MOR agonists that are biased against Barrestin recruitment will also be introduced. According to extensive studies in the Barrestin2 mouse models, such a strategy may allow for the treatment of pain with fewer side-effects than seen with traditional opioid therapies. Funding for this work has been sponsored in part by R01DA14600, R01DA18860, R03DA025158 to LMB and F31DA021952 to KMR.

## NEURAL CIRCUITS

### **Stress regulation of kappa opioid receptor signaling in the extended amygdala**

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Strong evidence exists for endogenous stress and anti-stress systems in mammalian organisms. Chronic exposure to stress is hypothesized to modulate the relative balance of activities of these systems within key circuitry in the brain, leading to dysregulated emotional behavior. The kappa opioid receptor (KOR) and its endogenous agonist, the

neuropeptide dynorphin, are one such 'stress' system. Dynorphin is expressed in the cell bodies and terminals of the bed nucleus of the stria terminalis (BNST), a brain region associated with anxiety and stress, suggesting that KOR activation in this region may play a role in the regulation of emotional behavior. However, the cellular actions of KOR in this region have not been characterized. Using whole-cell voltage clamp recordings in an *ex vivo* mouse brain slice preparation, we investigated the effect of KOR activation on inhibitory transmission in the BNST. We found that activation of KOR reduced GABAergic transmission via a presynaptic mechanism. We next examined the interactions between corticotrophin releasing factor (CRF) and KOR systems. Surprisingly, we found that CRF produced a KOR dependent inhibition of GABAergic signaling, suggesting that CRF can induce dynorphin release in the BNST. We next evaluated the impact of stress exposure on KOR systems. We found that the inhibitory effect of KOR activation on synaptic inhibition was significantly greater in DBA/2J mice compared to C57BL/6J mice. Further, we found that chronic, but not acute restraint, altered KOR modulation in C57BL/6J mice; while both acute and chronic restraint altered KOR modulation in DBA/2J mice. The results from this study add to a growing body of evidence suggesting that the KOR system is involved in the regulation of stress disorders. Supported by an ABMRF Young Investigator Award, a NARSAD Young Investigator Award, an INIA-Stress Pilot Project, R01AA01954 and R00AA17668 from the NIH, and PT090344 from the DoD.

**Opioid enhancement of GABA<sub>A</sub> receptor function in VTA dopamine neurons: A novel non-G protein mediated signaling mechanism induced by stress**

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Opioid receptors are G-protein coupled receptors that typically signal through activation of inhibitory Gi/o proteins. However, recent themes in GPCR research, including ligand-directed signaling and G protein independent signaling pathways, suggest that a variety of conditions determine the *in vivo* signaling pathway activated when a ligand binds to an opioid receptor. We have discovered that novel postsynaptic delta opioid receptor signaling emerges in VTA neurons following acute footshock stress. This novel signaling pathway causes rapid insertion of postsynaptic GABA<sub>A</sub> receptors into the synapse, increasing the ability of synaptically released GABA to inhibit VTA neurons. This effect is PI3K/AKT dependent, but G protein independent. This effect is in the opposite direction to the small DOR-mediated inhibition of GABA<sub>A</sub> signaling in naïve rats. Therefore, not only does the magnitude of opioid effects depend upon the state of the animal, but the signaling pathway utilized by opioid receptors is also state-dependent. This novel change in DOR signaling provides a potential mechanism for endogenous opioid release to selectively amplify the inhibition produced by GABA release in a subset of VTA neurons while reducing such inhibition in other VTA neurons. Supported by P50 AA017072, DA-016782-06, DA-030529-01, sponsored by the Army under award numbers W81XWH-08-1-0017 and W81XWH-07-1-043, and funds from the State of California for medical research on alcohol and substance abuse through the University of California, San Francisco.

**Dopamine mediated synaptic transmission in the VTA**

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Opioids alter the activity and excitability of midbrain dopamine neurons, the net effect being an alteration dopamine release and signaling at downstream targets. In order to understand the consequences of downstream dopamine signaling we have been investigating the mechanisms that regulate how dopamine mediates synaptic transmission. In the VTA and SNc, dopamine neurons make dendro-dendritic synapses with adjacent dopamine neurons. The dendritic release of dopamine activates post-synaptic D2-type autoreceptors on adjacent dopamine neurons and induces a GPCR-mediated inhibitory synaptic current. This talk will outline recent work characterizing the time course and concentration of dopamine that results from the phasic release of dopamine in the VTA that underlies the generation of this inhibitory synaptic current. This aims to understand the dynamics of temporal profile of dopamine during synaptic transmission. Dopamine is often believed to signal at low concentrations over extended periods at D2-receptors due to the high affinity of the D2-receptor. However, using the combination of whole-cell synaptic recordings, electrochemistry and the rapid application of dopamine to excised patches, we have found that post-synaptic D2-receptors are exposed to a relatively high concentration of dopamine (~10  $\mu$ M) for a brief period of time (maximum duration ~100 ms) during the peak of phasic transmission. By altering the duration of dopamine that was applied to excised patches we conclude that post-synaptic signaling mechanisms (D2-receptor/G-protein) not the duration of dopamine defines the timecourse of dopamine mediated synaptic transmission. This work suggests that despite being a GPCR agonist, dopamine may signal in a relatively localized manner. Support: NIH/NIDA DA026417 and NARSAD

**Context-dependent sensitization to morphine alters hippocampal neuroplasticity**

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Evidence suggests that long-term adaptations to the neural substrates of learning and memory after repeated drug treatment may play an important role in drug addiction. For instance, alterations of hippocampus-dependent contextual learning by drugs of abuse may lead to context-evoked cravings or drug seeking behavior. Glutamatergic systems, including  $\alpha$ -amino-3-hydroxy-5-methyl-4-isoxazole propionic acid receptors (AMPA), are thought to be involved in opiate-induced neuronal and behavioral plasticity, although the mechanisms underlying these effects are only beginning to be understood. The present study examines the effects of repeated morphine administration, using a paradigm that results in context-dependent behavioral sensitization, on the expression of AMPARs and the functional ramifications in the hippocampus. The learned association between morphine and the drug administration environment following context-dependent locomotor sensitization to morphine leads to persistent changes in the expression and synaptic redistribution of AMPARs. More specifically we find that following context-dependent sensitization we observe a persistent increased expression of AMPARs lacking the glutamate receptor 2 (GluR2) subunit in hippocampal synaptic fractions. In addition, we provide electrophysiological evidence that this effect is associated with an increase in excitatory synaptic transmission. Interestingly, we also find that the expression of

context-dependent sensitization is associated with an impairment in long-term potentiation (LTP). However, these alterations are reduced when morphine injections are received in a non-paired environment. We propose that the learned association between environment and morphine effects is mediated by changes in excitatory transmission and plasticity in the hippocampus. Overall, these data suggest that glutamatergic synaptic transmission in the hippocampus may play an important role in drug-induced behavioral sensitization and addictive processes in general. Supported by NIH grant R01 DA025036 to JMC.

**Drug-induced GABA transporter currents enhance GABA release and produce opioid withdrawal behaviours**

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Neurotransmitter transporters can affect neuronal excitability indirectly via modulation of neurotransmitter concentrations or directly through transporter currents. A physiological/pathophysiological role for transporter currents has not previously been described. Here we show both *in vivo* and *in vitro* that GABA transporter 1 (GAT-1) cation currents directly increase GABAergic neuronal excitability and increase synaptic GABA release in the periaqueductal gray (PAG) during opioid withdrawal. By contrast, GAT-1 did not indirectly alter GABA receptor responses via modulation of extracellular GABA concentrations. Importantly, we found evidence that this GAT-1-induced increase in GABAergic activity induced many of the PAG-mediated signs associated with opioid withdrawal. Together these data support the hypothesis that GAT-1 activity directly produces opioid withdrawal signs through direct hyperexcitation of GABAergic PAG neurons and nerve terminals, which presumably enhances GABAergic inhibition of PAG output neurons. These data provide the first evidence that neurotransmitter transporter currents can play a pathophysiological role. Supported by the National Health & Medical Research Council of Australia (project 512390, Fellowship to MJC 511914) and the Intramural Research Program of the National Institutes of Health, National Institute on Drug Abuse.

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# Notes

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