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# ABSTRACTS

## INVITED ADDRESS

Chair: *Harriet deWit*, University of Chicago, Chicago, IL.

PRIORITIES IN GENDER-FOCUSED RESEARCH: A VIEW FROM THE ADDICTION RESEARCH FOUNDATION. Robin Room. Addiction Research Foundation, Toronto, Ontario, Canada.

The report of an ARF Task Group on gender-focused research on alcohol and drugs is discussed. Undue research focus on males has often been reflected in study conceptualizations, designs and measurements. Gender-focused research has usually studied isolated individuals or the genders as aggregates; attention needs to be directed towards drinking and drugs in gender role interactions and to gender roles in family responses to drinking and drug use. Specific needs for gender-focused research were identified in studies of use and addiction patterns, of treatment modalities and systems, of community prevention programs, and of policy impacts.

## PRESIDENTIAL ADDRESS

Chair: *Ron Wood*, NYU Medical School, Tuxedo, NY.

TREATING DRUG ABUSE: THE POWER OF POSITIVE REINFORCEMENT. Maxine L. Stitzer.The Johns-Hopkins School of Medicine, Baltimore, MD.

New treatment approaches for drug abuse have recently been developed that are based on the competition between drug and nondrug reinforcers. Specifically, contingency management incentive programs designed to promote treatment retention and suppress drug use have been developed and tested in both methadone maintenance and drug-free settings. Effective results have been demonstrated, particularly for programs offering positive incentives based on therapeutic behavior change. The potency of positive incentive approaches, demonstrated in clinical research, can be extrapolated from the clinic setting to the larger society beyond.

## INVITED ADDRESS

Chair: *George Bigelow*, The Johns Hopkins School of Medicine, Baltimore, MD.

BEYOND TREATMENT: ABSTINENCE PROMOTION AS PUBLIC POLICY. Mark Kleiman. Harvard University, Kennedy School of Government, Cambridge, MA.

Drug-taking easily becomes a bad habit, without regard to whether the drug involved is licit or illicit. Those habits can be difficult to alter, and helping those who wish to change their habits can be a useful service, whether or not it is classified as "treatment" for a "drug dependency disorder."

Yet most persons who have had unwanted drug habits do not currently have them, and the overwhelming majority of ex-problem users received no formal treatment. This suggests that the question "How can we provide drug treatment to those who need it?" should be rephrased as "What can encourage and help desistance from unwanted drug habits?"

Asking the question this way points toward persuasion efforts and the diffusion of relapse-management techniques rather than the expansion of reimbursement for professional services.

## SOLVAY-DUPHAR AWARDEE ADDRESS

Chair: *Lewis Seiden*, University of Chicago, Chicago, IL.

AGGRESSION AND AFFECTIVE DISORDERS: COMMON AND SEPARATE MECHANISMS. Klaus A. Miczek. Tufts University, Medford, MA.

Recent discoveries of how various emotional behaviors are altered by selectively acting drugs force the replacement of the classic concept of cortical inhibition over raging limbic impulses. To capture the "emotional" dimension in behavior patterns during social conflict and anxiety in an objective and quantitative manner remains a continuing challenge, particularly at the preclinical level. Affective vocal expressions in important life situations in rodents and primates have emerged as targets for classic and novel drugs that act on newly identified molecular components of neural receptors. Pharmacological manipulations of serotonergic and GABAergic receptor subtypes show promising selectivity in modulating vocal behavior during social conflict as well as during withdrawal from opiates and benzodiazepine anxiolytics.

## INVITED ADDRESS

Chair: *Roland R. Griffiths*, The Johns Hopkins School of Medicine, Baltimore, MD.

GENETICS OF HUMAN DRUG ABUSE. Roy W. Pickens. NIDA Addiction Research Center, Baltimore, MD.

Genetic factors are known to influence quantity and frequency of alcohol, tobacco, and other drug use, as well as predisposition to psychoactive substance abuse and dependence. However, both twin and adoption studies suggest the extent of the genetic influence is in the modest-to-moderate range and (at least for alcoholism) varies as a function of sex, diagnostic subtype, age of onset, and presence of psychiatric comorbidity. The presentation will also discuss limitations in current knowledge for understanding the relative contributions of genetic and environmental factors in the etiology of individual cases of alcoholism, as well as the need to develop

diagnostic subtypes that reflect predominantly genetic or predominantly environmental forms of alcoholism.

**NEW FELLOW'S INVITED ADDRESS**
Chair: *Stephen Fowler*, University of Mississippi, University, MS.

BRAIN REWARD MECHANISMS AND THE NEUROBIOLOGY OF CRAVING. Eliot L. Gardner. Albert Einstein College of Medicine, New York, NY.

Self-administered electrical brain-stimulation reward is one of the most powerful reinforces known, rivalled only by the most intensely habit-forming drugs (e.g., cocaine). In humans, such stimulation produces intense pleasure or euphoria. The brain systems subserving this reward apparently consist of synaptically interconnected neurons associated with the medial forebrain bundle (MFB). "First-stage" neurons run caudally within the MFB and synapse in the ventral tegmental area on "second-stage" dopaminergic neurons running rostrally within the MFB which are preferentially activated by habit-forming drugs and which synapse in the nucleus accumbens on "third-stage" endogenous opioid peptide neurons. Many other types of neurons synapse onto this reward circuit to regulate hedonic tone. Also, this reward circuit is strongly implicated in the pleasures produced by natural rewards (e.g., food, sex). It is widely assumed that craving is mediated by these same circuits. Some theories posit that craving results from neurotransmitter depletion within the reward circuitry. Other theories posit that "opponent-process" neural systems exist within the reward circuitry, mediating both positive and negative hedonic processes. In this view, craving results from functional dominance of neural systems mediating negative hedonic tone over those mediating positive hedonic tone. Neurophysiological, neurochemical, neuropharmacological, and neurobehavioral data will be presented which favor this latter view of the neurobiology of craving, and clinical implications for the treatment of aberrant craving states (e.g., opiate addiction, cocaine addiction) at the human level will be discussed.

**NEW FELLOW'S INVITED ADDRESS**
Chair: *Maxine L. Stitzer*, The Johns Hopkins School of Medicine, Baltimore, MD.

APPLYING BEHAVIORAL PRINCIPLES TO THE TREATMENT OF COCAINE DEPENDENCE. Stephen T. Higgins. University of Vermont, Burlington, VT.

Cocaine dependence continues to be a widespread and serious public health problem in the US. Unfortunately, no consensus exists about how to treat cocaine dependence. Various pharmacological and psychological therapies have been investigated with mixed results. This presentation reviews findings from a programmatic series of studies conducted during the past four years to assess the efficacy of an outpatient behavioral treatment for cocaine dependence. The treatment is based on the concepts and principles of behavior analysis and behavioral pharmacology, and integrates contingency-management procedures with the community reinforcement approach. Results obtained to date indicate this treatment is very acceptable to patients, effectively retains them in treatment, engenders clinically significant levels of cocaine abstinence, and is effective in treating other forms of substance abuse common in this population. Overall, we believe the treatment represents an important step towards the development of empirically based and effective treatments for cocaine dependence.

**NEW FELLOW'S INVITED ADDRESS**
Chair: *Alice M. Young*, Wayne State University, Detroit, MI.

PREVENTING AIDS: DRUG TREATMENT AND NEEDLE EXCHANGE PROGRAMS. James L. Sorenson. University of California, San Francisco, CA.

The spread of acquired immunodeficiency syndrome (AIDS) among injection drug users has redirected the focus of many drug abuse treatment programs. A greater emphasis has emerged on harm minimization rather than abstinence from drugs of abuse. The epidemic has also spawned a new AIDS prevention approach, the needle exchange. This address presents new evidence about the effectiveness and limitations of these approaches as well as ways that they interact in practice.

Several recent federal reports summarize the efficacy of drug abuse treatment in preventing AIDS. Well-conducted research has established that programs can reduce needle use, prevent new HIV infection, and be a platform for mounting other interventions (e.g., tuberculosis screening and treatment). The intensity of treatment programs, however, limits their accessibility to the addict population.

Needle exchanges are a new approach to AIDS prevention. Research on this modality is also new. In the 1980s exchanges grew in popularity with the idea that they would discourage needle-sharing and provide a link to street-based drug users who were not in drug treatment. Exchanges have also met with opposition with the idea that they may condone injection drug use. Research has been promising but controversial.

A recent study has been examining USA needle exchange programs through site visits and collection of records. An intensive examination of 12 programs included questions about the degree to which exchanges and treatment programs interact. This presentation will examine questions about the collaboration versus competition of these modalities and the degree to which needle exchanges serve as a bridge to drug abuse treatment.

**NEW FELLOW'S INVITED ADDRESS**
Chair: *Chris Ellyn Johanson*, NIDA Addiction Research Center, Baltimore, MD.

NOVEL ANALYSIS AND TREATMENT STRATEGIES FOR NICOTINE AND OTHER DRUG DEPENDENCIES. Jed E. Rose. VA Medical Center, Durham, NC.

Several novel approaches have been developed in our research program for analyzing nicotine dependence and reducing the harmful effects of cigarette smoking. These methods may also have potential applications to other drugs of abuse. One major pharmacologic approach has been transdermal drug replacement, using a nicotine skin patch for smoking cessation treatment. Transdermal administration has key advantages which may be applicable to other abused drugs, including opiates and psychostimulants. Recently, we have found that combined administration of an agonist (nicotine)