National Institute on Drug Abuse

Director's Report

to the

National Advisory Council on Drug Abuse

May, 1997

Index

[Home Page][Office of Director] [First Report Section]

National Institute on Drug Abuse

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Research Findings

Basic Research

9-THC Stimulates Dopamine Neurons Via Their Afferent Monoaminergic Neurons

9-Tetrahydrocannabinol (9-THC), the major active constituent of marijuana, is believed to stimulate the brain's dopamine systems, as do other drugs of abuse. Dr. Edward D. French's group at the University of Arizona College of Medicine is determining the mechanisms of actions of 9-THC on dopamine neurons using electrophysiological techniques. First, these investigators confirmed that acute iv administration of 9-THC increases the firing rate of substantia nigra and ventral tegmental area dopamine neurons (both about a 50% maximum increase over baseline) (E.D. French, X. Wu & K. Dillon, 1997, NeuroReport 8, in press). Pretreatment with the selective cannabinoid CB1 receptor antagonist SR141716A blocked this effect. Last year, the availability of active and inactive enantiomers of the synthetic cannabinoid CB1 receptor agonist WIN-55,212 provided an additional approach. The active enantiomer (WIN-55,212-2) increased dopamine neuron firing rates in these brain areas, while the inactive isomer (WIN-55,212-3) was ineffective. Thus, they confirmed that the dopamine neuronal changes induced by 9-THC are mediated through the CB1 cannabinoid receptor. Also last year, they demonstrated that reserpine or alpha-methyl-p-tyrosine pretreatment in vivo each reduced the response of the dopamine neurons to 9-THC. Thus, it would appear that catecholamine or serotonin afferents to the dopamine neurons are needed for the cannabinoid stimulation. This was confirmed by further experiments on dopamine neurons in midbrain slice preparations, where the afferents are cut; neither 9-THC nor WIN-55,212-2 stimulated cell firing in the slices.

Nitric Oxide Synthase Inhibitor Blocks Sensitization to Cocaine

The development of sensitization to cocaine and methamphetamine is thought to underlie the processes of

1) addiction, 2) neurotoxicity and 3) psychopathology. In rodents, sensitization is manifested by increased responsiveness to the locomotor-stimulating, stereotypy- and seizure-inducing (kindling) effects of cocaine. It has been established by the groups of Karler, White, and Wolf that glutamatergic neurotransmission and the NMDA subtype of glutamate receptor are the primary mediators of the induction of sensitization. Dr. Yossef Itzhak from the University of Miami School of Medicine found an increase in the number of NMDA receptors in the cortex of cocaine kindled mice, and further demonstrated that activation of the NMDA receptor's intracellular messengers, Ca2+ and nitric oxide (NO), mediates the development of sensitization to the convulsive and lethal effects of cocaine. Recently, he reported that neuronal selective NO synthase (NOS) inhibitors prevent the induction and expression of sensitization (Itzhak, Neuropharmacology 35, pp. 1065-1073, 1996). Further, a neuronal NOS inhibitor protects against methamphetamine neurotoxicity in mice (Itzhak and S. Ali, J. Neurochem. 67, pp.1770 1773, 1996). Elucidation of these mechanisms may advance the development of medications for the management of psychostimulant abuse.

Cannabinoids and Excitotoxicity

Because many drugs of abuse are known to affect glutamatergic synaptic transmission, Dr. Stanley Thayer and coworkers are testing the hypothesis that such drugs might influence the progression of excitotoxicity. These researchers found that cannabinoids significantly inhibit glutamatergic synaptic transmission. Their report identifying a synaptic mechanism of the cannabinoids is of considerable importance to understanding the cellular effects of marijuana. Thus, focus was directed toward the study of cannabinoids on glutamatergic synaptic transmission and excitotoxicity. In hippocampal neurons, activation of cannabinoid receptors inhibits the N and P/Q subtypes of Ca++ channels suggesting a likely molecular mechanism for the synaptic inhibition produced by cannabinoids. Cannabinoids were found to protect from excitotoxicity in vitro, suggesting that if compounds could be developed in which the abuse properties were separated from this potentially therapeutic effect, certain cannabimimetic drugs might be useful neuroprotective agents. A key feature of many abused drugs is the development of tolerance upon repeated exposure. Experimenters have found that the effects of full cannabinoid agonists on synaptic transmission desensitize during prolonged exposure. In contrast, the effects of one of the synthetic compounds CP55940, a compound that acts as a partial agonist, does not desensitize, suggesting that this drug may be effective in preventing the neurodegeneration that results from glutamate release. Thayer, S.A., and Shen, M. Cannabinoid Receptor Agonists Inhibit Glutamatergic Synaptic Transmission in Rat Hippocampal Cultures. Symposium on Cannabis and the Cannabinoids (Int. Cannabinoid Res. Soc.) p. 45, 1996. Shen, M. and Thayer, S.A. Desensitization of Cannabinoid-Mediated Inhibition of Glutamatergic Synaptic Transmission between Cultured Rat Hippocampal Neurons. Soc. Neurosci. Abst. 22: 82, 1996.

Tropane Derivative Holds Promise as a Methadone-Like Approach for Treating Cocaine Addiction As reported in the February 1997 issue of the Journal of Pharmacology and Experimental Therapeutics, Dr. Michael Nader and his co-workers from the Drug Abuse Center Neuroscience Program at the Bowman Gray School of Medicine in Winston Salem, NC tested PTT, a tropane derivative, in nonhuman primates. These researchers found that the drug produces internal cues similar to cocaine (that is, it is perceived as having properties like cocaine), but it will not substitute for cocaine in monkeys trained to self-administer cocaine. Also, PTT itself is not self-administered. Further, a single pretreatment dose of PTT to monkeys trained to lever press for intravenous cocaine prevented cocaine self-administration for 4 hours or more. The findings that the compound is not self-administered, prevents cocaine self-administration, and has subjective effects similar to cocaine, suggest that this tropane derivative, or a drug like it, would be useful in preventing cocaine relapse without compliance problems.

Biosensors

A recent analytical report describes a fiber optic system, known as an immunobiosensor, capable of determining the cocaine content of coca leaf samples in the field. It requires optical fibers which have been coated with a monoclonal antibody, in this case, one generated against benzoyl ecgonine-fluorescein as a sensor, and a portable fluorometer. Since cocaine competes with benzoyl ecgonine-fluorescein in binding to the antibody, its concentration is proportional to the decrease in fluorescence of the sensor when both are present in a sample. The method is rapid, of reasonable precision, and can be performed directly on acid extracts of coca leaves. Mohyee Eldefrawi, Charles Helling et al., Biosensors and Bioelectronics, 12(2), pp.113 124, 1997.

Blood Barrier and Narcotic Peptides

The tritiated mu-selective antagonist CTAP has been shown in a rat brain perfusion study to cross the blood brain barrier and the cerebral spinal fluid barrier in amounts approximating those of tritiated morphine. CTAP was bound to albumin in the perfusion medium and to rat serum protein, and remained 63% "intact" in the brain after a 20 minute perfusion, based on radioactive counts for the major HPLC peak in the detection system used. It is suggested that the blood brain barrier transport is based on passive diffusion rather than saturation transport, since the degree of transport is unaffected by the presence of unlabeled CTAP. The compound may have a potential role in narcotic addiction treatment. T. Abbruscato, S. Thomas, V. Hruby, T. Davis, J. Pharmacology and Experimental Therapeutics, 280, pp. 402 409, 1997.

Homer, a PDZ-domain Protein Selectively Binds Metabotropic Glutamate Receptors

Using differential cloning strategies, NIDA Grantee Paul Worley of Johns Hopkins University discovered Homer, a novel, brain-specific, small protein of 186 amino acids that differs from the conventional immediate early genes in that it can directly modify cellular function.

Recently a new protein motif called PDZ domain has been shown to be important in the targeting of a variety of membrane proteins to cell-cell junctions including synapses. The most widely recognized member of this family of proteins containing a PDZ domain is PSD95 which was originally identified as a component of the postsynaptic density and recently shown to interact with the C-terminus of the ionotropic glutamate receptor, N-methyl-D-aspartate receptor (NMDA receptor). By virtue of the physical interaction between PSD95 and the NMDA receptor, it is hypothesized that PSD95 functions to restrict the spatial distribution of the NMDA receptor.

While sequence comparisons fail to demonstrate a significant homology between Homer and PSD95, there were a number of functional similarities that suggested they may possess a similar domain for interaction. First, Dr. Worley and his coworkers demonstrated that Homer interacts with the C-terminal 4 amino acids of metabotropic glutamate receptor, mGluR5. This is the same C-terminal dependency for the interaction between PSD95 and NMDA receptor. Second, Homer possesses a sequence GLGF that is present in all PDZ family members and deletion of this region destroys the interaction between Homer and mGluR5. Third, the crystal structure of PSD95 demonstrated that the GLGF sequence forms the critical interaction site. Researchers also demonstrated that Homer is remarkably selective for mGluR receptors that mediate turnover of the phosphoinositide pathway (mGluR1 and mGluR5). Immuno-localization of Homer showed that it is concentrated at synaptic spines; this selective expression at neuronal spines suggests that Homer may be targeted to the spines.

In an accompanying paper in the same issue of Nature, another team at Johns Hopkins University led by Richard Huganir described GRIP, a larger synaptic protein possessing seven PDZ domains that interacts with another ionotropic glutamate receptor, a-amino-3-hydroxy- 5-methyl-4-isoxazole propionic acid receptor (AMPA receptor). Because glutamate is the major excitatory neurotransmitter in the mammalian brain, the identification of these two proteins, Homer and GRIP, will undoubtedly advance our understanding of the molecular mechanism of synaptic clustering of receptors.

Cocaine produces long lasting changes in the responsiveness of neurons in the basal ganglia and neuronal circuits in the frontal cortex and midbrain. These changes may play a role in the addictive potential of cocaine. Dr. Worley and his coworkers discovered that Homer is markedly induced in neurons of the basal ganglia in response to acute administration of cocaine. Homer is also persistently upregulated in the frontal cortex following chronic administration of cocaine. Metabotropic receptors have recently been demonstrated to play an important role in motor and behavioral responses of the nucleus accumbens and striatum and to be regulated by dopamine signaling from the midbrain. Homer may be critical in regulating this interaction. Brakeman, P.R., Lanahan, A.A., O'Brien, R., Roche, K., Barnes, C.A., Huganir, R.L. and Worley, P.F., Nature, p. 284, March 20, 1997.

Opioid Receptor, Hematopoiesis, and Reproduction

Using a knockout mouse deficient in mu opioid receptor, NIDA grantee Dr. Lei Yu and his colleagues at the Indiana University School of Medicine recently have discovered that the mu receptor gene disruption affected a number of aspects of the mouse physiology. Of particular interest is the observation that a lack of the functional mu receptor resulted in changes in both the host defense system and the reproductive system. They found increased proliferation of hematopoietic progenitor cells in both bone marrow and spleen, indicating a link between hematopoiesis and the opioid system, both of which are stress-responsive systems. They also detected changes in sexual function in male homozygous mice, including reduced mating activity, decrease in sperm count and motility, and smaller offspring litter size. These results suggest a novel role of the mu opioid receptor in hematopoiesis and reproductive physiology, in addition to its known involvement in pain relief. Journal of Experimental Medicine, April 21, 1997.

Gender-Related Differences

A recent article published by NIDA supported researchers demonstrates pronounced gender-related differences in the antinociceptive effects of morphine. These differences appear to reflect markedly enhanced CNS sensitivity to morphine in males compared with females, as opposed to any intrinsic differences in the bioavailability of morphine. Furthermore, these gender-related differences appear to exist at both spinal and supraspinal levels. Their findings also suggested that the acute effects of steroids play little role in the gender-related differences observed; rather, it appears more probable that the organizational effects of steroids, which occur in the late prenatal and early postnatal stages and in large part determine gender-related distinctions in males and females, may be more significant. Although the clinical significance and the underlying mechanisms of these findings are unknown at this point, these results may provide a means to begin examining gender-related differences in abuse liability of psychoactive drugs. Cicero, T.J., Nock, B. and Meyer, E.R. J Pharmacol. Exp. Therap. 279, pp. 767-773, 1996.

Gender-Related Differences

Dr. Marlene Wilson and her co-workers have examined gender related differences and regional variations in the ability of neuroactive steroid derivatives of progesterone, testosterone and glucocorticoids to alter physiological gama-aminobutyric acid (GABA) responses in brain regions of male and female rats. All four steroids examined increased GABA-activated chloride influx; however, the maximal enhancement in GABA responses differed significantly among brain regions. Limbic areas, such as hippocampus, amygdala and cortex, displayed greater maximal responses to these steroids than hypothalamic or cerebellar preparations. Since gender-related differences in neuroactive steroid modulation of GABA responses were observed with the glucocorticoid derivative, tetrahydrodeoxy-corticosterone (THDOC) but not with the progesterone derivative, 3-alpha 5-alpha tetrahydro-progesterone (THP), it would further suggest that the ability of THDOC and THP to potentiate GABA responses are affected differentially by the hormonal milieu. Wilson, M.A. and Biscardi, R. Life Sciences, In press.

Opiate Withdrawal Increases ProTRH Gene Expression in the Ventrolateral Column of the Midbrain Periaqueductal Gray

The midbrain periaqueductal gray matter (PAG) has a critical role in the modulation of behavioral and autonomic manifestations of the opiate withdrawal syndrome. Utilizing multi disciplinary approaches including behavioral studies, in situ hybridization histochemistry, immunohistochemistry and radioimmunoassay, Dr. Ronald M. Lechan of the New England Medical Center and his research team have demonstrated a nearly 5 fold increase in proTRH gene expression in neurons of the ventrolateral column of the PAG following naltrexone precipitated morphine withdrawal. The accumulation of immunoreactive proTRH-derived peptides, but not the mature TRH tripeptide, was concomitantly observed in these cells. These observations along with the fact that the ventrolateral PAG mediates a hyporeactive pattern of behavioral and autonomic reactions indicate that proTRH-derived peptides synthesized in neurons of the ventro-lateral PAG may function as modifiers of opiate withdrawal responses. Currently Dr. Lechan and his colleagues are attempting to elucidate the anatomical connectivity of this unique population of opiate-responsive proTRH neurons and to determine how these neurons are integrated into the control system that responds to the hyperactive state of morphine withdrawal.

The observation that there is a nearly 5-fold increase in proTRH gene expression in neurons of the ventrolateral column of the PAG following naltrexone precipitated morphine withdrawal is a novel and exciting finding. It opens up an entirely new area of opiate research and offers opportunities to design new approaches for the treatment of opioid addiction and the withdrawal syndrome. The data generated from this work could have significant clinical relevance. Legradi,G., Rand, W.M., Hitz, S., Nillni, E.A., Jackson, I.M.D., and Lechan, R.M. Opiate Withdrawal Increases ProTRH Gene Expression in the Ventrolateral Column of the Midbrain Periaqueductal Gray. Brain Research, 729, pp.10-19, 1996.

Isozyme-Specific Opioid-Induced Adenylyl Cyclase Supersensitization Acute stimulation of opiate receptors inhibits adenylyl cyclase (AC) and reduces cAMP in the cell, while chronic activation has been shown to lead to a progressive increase in AC activity. This phenomenon, particularly manifest upon withdrawal of the opiate agonist, is referred to as AC superactivation. The mechanism of AC superactivation is not clear, although it seems to play an important role in opiate addiction.

Zvi Vogel of The Weizman Institute of Science, Rohovot, Israel has transfected AC of types I-VIII (currently ten AC isozymes are known) into COS cells and studied the regulations of these AC isozymes by acute and chronic opiate exposures. The results show that the various AC isozymes are differently regulated by opiates. AC types I, V, VI and VIII are inhibited by acute opiate exposure and super-activated following chronic exposure. AC II, IV and VII are activated by acute opiate exposure and do not show the superactivation. AC type III is not affected by the presence of opiates. AC-V yielded the largest superactivation. This information will enable identification of the particular AC isozymes which participate in opiate signaling , and the reward system, in vivo and hence may facilitate the development of effective treatment strategies for opioid abuse. Avidor-Reiss, T., Nevo, I., Saya, D., Bayewitch, M. and Vogel, Z. Opioid-Induced Adenylyl Cyclase Supersensitization is Isozyme-Specific. J. Biol. Chem. 272, pp. 5040-5047, 1997.

Evaluation of Discriminative Stimulus Anandamide was shown to produce behavioral effects in mice characteristic of psychoactive cannabinoids; however, differences have also been found between anandamide and delta-9 THC. Drs. Billy Martin and Raj Razdan, and their colleagues designed a study to examine the discriminative stimulus effects of anandamide in rhesus monkeys trained to discriminate delta-9 THC from vehicle. While anandamide failed to produce reliable substitution for delta-9 THC and did not reduce response rates, 2-methylarachidonyl-2 prime-fluoroethylamide (methylated fluoroanandamide, a stable analog of anandamide), produced full dose-dependent substitution for delta-9 THC at doses that caused no significant changes in response rates. The results suggest that systematically-administered anandamide may be metabolized in monkeys before behaviorally active concentrations

could reach the brain and further suggest that the metabolically stable analog of anandamide, methylated fluoroanandamide, may aid in the discovery of functional properties of the endogenous cannabinoid system. Wiley, J.L., Golden, K.M., Ryan, W.J., Balster, R.L., Razdan, R.K., and Martin, B.R. Discriminative Stimulus Effects of Anandamide and Methylated Fluoroanadamide in delta-9-THC-Trained Rhesus Monkeys. Pharmacol. Biochem. Behav., In press.

Hippocampus and GIRK1 Regulation of potassium channels by receptors coupled to heterotrimeric G proteins such as the different types of opioid receptors can have a profound effect on neuronal excitability by changing the duration of an electrical impulse or action potential, altering the membrane potential of neurons, and the number of action potentials fired by neurons. These changes can indirectly alter the amount of neurotransmitter released by a neuron which in turn can affect the excitability of neighboring neurons. One family of potassium channels modulated by opioid receptors, dopamine receptors, and other receptors coupled to G proteins that have been recently cloned is the G coupled inwardly rectifying potassium channels (GIRKs). To better understand the neuronal function of these GIRKS Dr. Charles Chavkin and coworkers at the University of Washington used immunohistochemistry and high resolution electron microscopy to define the subcellular localization and cell type that expresses GIRK1 in the hippocampus. Chavkin reports that GIRK1 immunoreactivity is regionalized within stratum lacunosum molecular and the superficial striatum radiatum in the hippocampus. At the cellular level electron microscopy revealed that GIRK immunoreactivity is found immediately adjacent to asymmetric (excitatory type) post synaptic densities along dendritic spines and shafts of pyramidal cells. Post synaptic densities are areas where receptors are located at synapses, the junctions where neurons communicate. Chavkin suggests that the localization of GIRK1 in dendritic shafts and spines could play a significant role in modulating the post synaptic responses at excitatory synapses by decreasing the likelihood of propagation of synaptic currents from distal dendrites. Drake, C.T., Bausch, S.B., Milner, T.A., Chavkin, C. GIRK1 Immunoreactivity is Present Predominantly in Dendrites, Dendritic Spines, and Somata in the CA1 Region of the Hippocampus. Proc. Natl. Acad. Sci. USA. 94, pp. 1007-1012, 1997.

μ3 opiate receptor and Morphine Morphine causes human monocytes, granulocytes, and endothelial cells as well as molluscan immunocytes and microglia to change from a flattened to a rounded shape. This change in morphology produced by morphine may play an important role in the ability of morphine to reduce inflammation by altering cell adhesion and cell migration through endothelial cells. Dr. Harold Magazine and his colleagues examined the role of nitric oxide in morphine-induced rounding of monocytes, granulocytes, and endothelial cells. Dr. Magazine and his colleagues showed that morphine induces the synthesis of nitric oxide. The synthesis of nitric oxide appears to play an important role in morphine-induced rounding because exposure to morphine elicits nitric oxide production, nitric oxide agonists induce cell rounding, and nitric oxide antagonists block morphine induced rounding. The synthesis of nitric oxide by morphine was blocked by naloxone; however, opioid peptides failed to elicit the production of nitric oxide. Magazine suggests that the morphine-induced NO release may be mediated by the activation of the opiate alkaloid-selective, opioid peptide insensitive m3 receptor and that the coupling of nitric oxide to the m3 opiate receptor has been conserved throughout evolution. Magazine, H.I., Liu, Y., Bilfinger, T.V., Fricchione, G.L., and Stefano, G.B. Morphine-Induced Conformational Changes in Human Monocytes, Granulocytes, and Endothelial Cells and in Invertebrate Immunocytes and Microglia are Mediated by Nitric Oxide. Journal of Immunology, 156, pp. 4845-4850, 1996.

Separation and Detection of Neurotransmitters and Neurochemicals in Ultra-Small Volumes

Richard N. Zare, Ph.D., Professor of Chemistry at Stanford University who co-authored a paper last summer suggesting possible fossil evidence of life on Mars is also a NIDA grantee who is devising methods to separate and detect chemical compounds in single synaptic vesicles that normally contain ultra small volumes of neurotransmitters. This is important because biological systems are partitioned into small compartments from single cells (pico-to femtoliters) to single mitochondria and vesicles (attoliters). Analysis of the composition of individual synaptic vesicles will provide insight into the basic mechanisms by which synaptic transmission is modified. In a paper published in Science he reports significant progress in separating neurotransmitters by capillary electrophoresis whose biological activity and presence are detected by patch-clamp electrophysiology. Capillary electrophoresis can be used to separate compounds dissolved in volumes as small as the low femtoliter range and patch clamp electrophysiology can detect the presence of a small number of molecules of agonist that can open a single ion channel. Orwar, O., Jardemark, K., Jacobson, I., Moscho, A., Fishman, H.A., Scheller, R.H., and Zare, R.N. Patch-Clamp Detection of Neurotransmitters in Capillary Electrophoresis. Science, 272, pp. 1779-1782, 1996.

[Home Page][Office of the Director][Report Index][Next Report Section]

Archive Home | Accessibility | Privacy | FOIA (NIH) | Current NIDA Home Page

National Institute on Drug Abuse

Director's Report to the National Advisory Council on Drug Abuse

May, 1997

Research Findings

Behavioral Research

Individual Differences in Drug Discrimination

To test the effects on operant food responding via discrimination and generalization of internal amphetamine cues on high versus low behavioral responders, several different operant pre-test screening methodologies for behavioral response to novelty/stress were used. Based on measures of activity, rats were grouped into high versus low responders. Both groups were then trained to discriminate amphetamine versus saline in a two lever procedure using food maintained responding. Following this training, amphetamine generalization tests were conducted across a range of doses. In the first of these two tests, the high responders to novelty were found to be more sensitive than the low responders to the bar-press suppressant effects of amphetamine. In the second generalization test, high responders were also more sensitive to the discriminative effects of amphetamine (i.e., lower median effective dose). These results are discussed in terms of identifying the processes common to the screens (e.g. stress and novelty). Bevins, R.A., Klebaur, J.E., and Bardo, M.T. Individual Differences in Response to Novelty, Amphetamine-Induced Activity and Drug Discrimination in Rats. Behavioral Pharmacology, In press.

Drug Combinations: Caffeine + Triazolam is not Caffeine + Buspiron

The drug discrimination paradigm has become a standard method by which many behaviorally active compounds are classified in animal research. Researchers from the University of Vermont adapted this procedure to humans to ask: Can the stimulus properties of caffeine, a methylxanthine CNS stimulant, be altered by the two chemically distinct anxiolytic compounds triazolam and buspiron? They found that triazolam given in combination with caffeine blocked the subject's ability to discriminate caffeine. By contrast, buspiron given in combination with caffeine had no effect on volunteers' ability to discriminate caffeine from placebo. These results demonstrate the utility of drug discrimination paradigms for studying the effects of drug combinations in humans. Furthermore, these results suggest triazolam and caffeine share a common neurosubstrate for detection of their stimulus properties that are distinct from the neurosubstrate associated with buspiron detection. Oliveto, A.H., et al. Behavioural Pharmacology, In press.

Neonatal Withdrawal Syndrome in Infants Exposed to Cocaine and Methadone

The effect of concomitant cocaine and methadone use on neonatal withdrawal was examined in 68 infants born to methadone-maintained mothers. Fifty-three (78%) of these mothers reported regular cocaine use during pregnancy and/or had positive urine screens. Methadone dose in the last weeks of pregnancy was positively correlated with withdrawal severity. Infants exposed to both cocaine and methadone had higher first withdrawal scores; however, cocaine-exposed infants did not require more medication for withdrawal management, nor were they more likely to show retarded growth in the uterus, prematurity, or early perinatal complications. These data do not support a common view among women in methadone maintenance that cocaine will either minimize their infant's methadone

withdrawal or will decrease the length of hospitalization after birth. Such incorrect beliefs may be contributing to the high frequency of cocaine use in the present sample of women. Mayes, C., & Carroll, K.M. Substance Use and Misuse, 3, pp. 241-253, 1996.

False Feedback about Work Performance Reduces Methamphetamine Intake

Researchers at Columbia University tested whether research volunteers who are told that d amphetamine impairs research task performance and reduces monetary earnings would actually decrease their d-amphetamine self-administration in the laboratory. With no performance feedback, volunteers chose d-amphetamine over placebo 78% of the time, and increased amphetamine choices when they were given feedback that their performance had improved. By contrast, d-amphetamine self-administration decreased significantly to 25% when subjects were told that it impaired their performance on work tasks and resulted in reduced earnings. In reality, d-amphetamine had little effect on work task performance. With regard to subjective effects, d amphetamine significantly increased ratings of "Stimulated" and "Good Drug Effect" and significantly decreased ratings of "Tired" and "Sleepy." These results demonstrate that d amphetamine served as a reinforcer under conditions in which drug self-administration did not influence monetary earnings, but that d-amphetamine self-administration could be modified by feedback/monetary earnings. Thus, contingencies associated with performance have important implications for drug use in the workplace. Comer, S.D., Haney, M., Foltin, R.W., Fischman, M.W., Psychopharmacology, 127, pp. 39-46, 1996.

The Noradrenergic System May Not be Involved in Morphine Discriminative Effects

Since studies suggest that the noradrenergic system is involved in the analgesic effects of opioids and in physical signs of opioid withdrawal, is the noradrenergic system involved in the discriminative effects of morphine? First, a range of doses of morphine (0.3-10.0 mg/kg) produced dose-dependent increases in morphine-appropriate responding in rats without substantial decreases in response rate. In several experiments, neither the alpha 2 agonist clonidine (0.003 0.1 mg/kg), the alpha 1 antagonist prazosin (0.1-10.0 mg/kg), the alpha 2 antagonist yohimbine (0.1-10.0 mg/kg), the beta 2 agonist salbutamol (0.03-10.0 mg/kg), nor the beta antagonist propranolol (1.0-10.0 mg/kg) substituted for morphine nor altered the discriminative-stimulus effects of morphine when administered in combination. These data suggest that the noradrenergic system is not involved in the discriminative-stimulus effects of 5.6 mg/kg morphine in rats. Hughes, C.E., Habash, T., Dykstra, L.A., Picker, M.J. Pharmacol. Biochem. Behav. 53, pp.979-986, 1996.

Gender and Vulnerability Factors in Cigarette Abstinence

Dr. David Gilbert from Southern Illinois University is investigating the role of individual differences in physiological and psychological responses to smoking abstinence among females as they relate to individual differences in personality and nicotine dependence and comparing responses of this female sample to a recently collected all-male sample. Large individual differences in response to quitting have been found to correlate with personality, psychopathology, and nicotine dependence. Preliminary data indicate that neuroticism and depressive trait measures predict degree of smoking cessation induced negative affect and depressive state. These findings are consistent with the PI's hypothesis that individuals scoring high in trait depression and neuroticism smoke to self-medicate their temperamental disposition toward negative affect. The data, when complete, will lead to new knowledge that will have implications for how to individualize smoking cessation programs to maximize successful long-term abstinence.

Behavioral Methods for Cigarette Smoking Cessation

Dr. Maxine Stitzer at Johns Hopkins University conducted a study to understand the role of nicotine in the maintenance of cigarette smoking. Volunteers compared their own brand (mean nicotine yield = 1.07 mg; mean tar = 15.8 mg), a "light" cigarette (nicotine yield = 0.7 mg; tar = 10 mg), or a denicotinized cigarette (nicotine <0.1; tar = 10.8 mg) in random order on three separate days. Subjective ratings for the denicotinized and light cigarettes were comparable. They were rated as similar in strength and satisfaction (both were rated as lower than their own brand). Desire to smoke scores declined after smoking and rose gradually over the next 90 mins with similar profiles across the three cigarette types. The results suggest that acute subjective effects of smoking in experienced smokers may be determined more by tar and/or sensory characteristics than by nicotine levels. Pharmacology, Biochemistry and Behavior, In press.

Gender Differences in Psychiatric and Substance Use Comorbidity among Treatment-Seeking Opioid

Abusers

Psychiatric and substance use comorbidity was assessed in 716 opioid abusers (47.2% women) seeking methadone maintenance during a 5-year period. Rates of co-occurring mental disorders and personality traits were compared by gender. Although rates of comorbidity were similar in women and men (47% vs 48%), women were less likely than men to have a DSM-III-R personality disorder (28.4% vs 40.5%) or an antisocial personality (15.4% vs 33.9%) but more likely to have a mood disorder (27.5 % vs 11.4%) and 7 times more likely to have a borderline personality (9.5% vs 1.3%). Although all patients had at least one substance use diagnosis beyond opioid dependence, most often cocaine dependence, women were less likely than men to have a life-time cannabis, alcohol, or hallucinogen disorder or a current cannabis (12.1% vs 19.8%) or alcohol dependence (19.5% vs 29.4%). Brooner, R.K., King, V.L., Kidorf, M., Schmidt, C.W., and Bigelow, G.E. Psychiatric and Substance Use Comorbidity Among Treatment-Seeking Opioid Abusers. Arch. Gen. Psychiatry, 54(1), pp. 71 80, 1997.

Contingent Reinforcement of Group Participation Versus Abstinence in a Methadone Maintenance Program

This study evaluated the relative efficacy of two strategies for reducing illicit substance use in a methadone maintenance setting: urinalysis-contingent reinforcement versus participation in Training in Interpersonal Problem Solving groups (TIPS), an 8 week manualized psychoeducational group designed to promote problem-solving skills. Three months after admission, 66 methadone patients were randomly assigned to either the Urinalysis contingent condition in which take-home medication doses were received based on drug free urines or to the psychoeducational group in which take-home medication doses were received based on group attendance. During the 24 week intervention period, the urinalysis-contingent group showed greater improvement in rates of abstinence from illicit drugs and better met criteria for clinical improvement than the psychoeducational group. It appears that reinforcement of the psychoeducational group attendance is not as effective for reducing illicit drug use among methadone maintenance patients as is urinalysis-contingent reinforcement. These findings support the efficacy of contingency interventions targeted specifically at the drug using behavior. Iguchi, M. et al., Journal of Experimental and Clinical Psychopharmacology, 4(3), pp. 315-321, 1996.

Reinforcing Operants Other Than Abstinence in Drug Abuse Treatment: An Effective Alternative for Reducing Drug Use

This study evaluated the efficacy of Treatment Plan Based Reinforcement (a task-oriented behavioral intervention) compared with a standard treatment control and a more traditional contingency management intervention in reinforcing the provision of drug-free urines. Following a six-week stabilization phase, 103 subjects in methadone maintenance treatment were randomly assigned to either the standard treatment control, the urinalysis-based reinforcement or the treatment plan reinforcement. The intervention period lasted 12 weeks. Participants in the Treatment Plan group earned vouchers for completing objectively defined and clearly verifiable treatment plan tasks and were not reinforced for the provision of drug-free urines. The vouchers had an exchange value of 50 cents and could only be redeemed for expenses related to treatment plan goals (maximum value, $15 per week). The Treatment Plan group earned more vouchers than the Urinalysis-Contingent group and the number of vouchers earned bore a direct relationship to the number of drug free urines submitted. Only the Treatment plan group demonstrated improvement in abstinence rates that were maintained after the intervention was discontinued. The results from this study suggest that reinforcement of clearly defined behavioral tasks targeted to treatment plan goals increases involvement in behaviors inconsistent with drug use among methadone maintenance patients. Iguchi, M. et al. Journal of Consulting and Clinical Psychology, In press.

The NIDA Collaborative Cocaine Treatment Study

Investigators recently reported on the prevalence and pretreatment psychiatric, drug use, and demographic correlates of DSM-III-R personality disorders in a sample of 289 cocaine dependent outpatients accepted into the pilot phase of a randomized, multisite, clinical trial comparing different psychotherapy and drug counseling treatments. Results showed that 48% of the patients had at least one personality disorder and 18% had two or more. Of those with a personality disorder, 65% had a cluster B disorder with antisocial and borderline personality disorders being the most common. Men were significantly more likely to be diagnosed with antisocial personality disorder than women. Patients with personality disorders were significantly more likely to receive an another Axis 1 diagnosis and to have more severe psychiatric symptoms. However, the groups did not differ on other measures of drug use severity or demographic variables. While the prognostic significance of these findings is yet to be determined, the results suggest that personality disorders are apt to play an important role in the treatment of cocaine dependence.

National Institute on Drug Abuse

Director's Report to the National Advisory Council on Drug Abuse

May, 1997

Research Findings

Clinical and Services Research

Very Long-Term Users of Marijuana in the United States: A Pilot Study

In a feasibility study to examine long-term use of marijuana and associated consequences, Pope and his colleagues at McLean Hospital/Harvard recruited a sample of 37 Americans, aged 30-74, who had smoked marijuana on at least 5,000 separate occasions. These subjects belonged to a wide range of ethnic groups, educational backgrounds, occupations, and annual income and did not display any obvious features which distinguished them from the population as a whole. They typically began smoking in the early 1960s or early 1970s, and then continued to smoke heavily into middle adulthood because they felt that marijuana relieved unpleasant feeling states such as anxiety or depression. According to the authors, individuals of this type are recruitable but have not been previously examined; and additional studies of older, long-term marijuana users are needed (Gruber, A., Pope, H.G., and Oliva, P. Substance Use and Misuse. 32(3), pp. 251-266, 1997). In addition, Pope and his team reviewed the literature and found a series of 5 cases where marijuana was used because it produced a direct antidepressant effect in those who had mood disorder. According to the authors, if it is true, these observations argue that many patients may use marijuana to "self-treat" depressive symptoms. Do Patients Use Marijuana as an Antidepressant? Gruber, A., Pope, H., and Brown, M. Depression, 4, pp. 77-80, 1996.

Marijuana and Mortality

Sidney and his colleagues at Kaiser Permanente in Oakland, California reviewed medical charts of approximately 67,000 patients enrolled in the HMO and found that the current use of marijuana was not associated with increased mortality in non-AIDS men or women. However, the current use of marijuana was associated with increased risk of AIDS mortality in men (RR of 1.90 [95% CI of 1.33, 2.73)]. Sidney, S., Beck, J., Takawa, I.S., Quesenberry, C.P., and Friedman, G.D. Am. J. Pub Health, April 1997. A study is underway to examine if the living AIDS patients use or have used marijuana for medical purposes.

Drug Use History and Criminal Behavior Among 133 Incarcerated Men

To investigate the relationship between crime and substance abuse, Pope and his team at Harvard/McLean Hospital evaluated consecutively 133 male prisoners using the DSM-III-R criteria for substance abuse. They also assessed whether there was a relationship between the nature of substance dependence and the type of crime committed, whether sexual, violent, or non-violent. About 95% of the prisoners were dependent on one or more substances of abuse; 58% were acutely intoxicated with one or more substances at the time of committing the index crime and an additional 6% were withdrawing from a substance at the time of crime. However, there was no significant correlation between the type of substance abused or the number of individuals intoxicated and the type of crime committed. Kouri, E., Pope, H., Powell, K., Campbell, C., Oliva, P., and Katz, D. American Journal of Drug and Alcohol Abuse, In

press.

Psychiatric Effects of Exogenous Anabolic/Androgenic Steroids

In an excellent book chapter, the authors have reviewed the current literature on the psychiatric effects of anabolic steroids. The use of large doses of anabolic steroids (up to 1,000 mg/wk) is associated with manic episodes, accompanied by psychotic symptoms, while depressive symptoms are associated with withdrawal from steroid dependence, both of which require clinical intervention. Further, violence toward others and "reverse anorexia nervosa" are also associated with steroid dependence. In the latter syndrome, the individuals perceive themselves to be small and weak, even when they are in fact large and muscular. This syndrome appears to represent a subtype of body dysmorphic disorder. Authors point out that most findings are based on data collected in men and thus additional studies are needed to examine the adverse consequences of steroid use in women. Pope, H.G. Jr, and Katz, D.L. In Wolkowitz, O.M., and Rothschild, A.J. (eds.) Psychoneuroendocrinology for the Clinician, In press.

Genetic Basis Indicated for Abuse of Marijuana

Michael Lyons, Ming Tsuang and colleagues have determined that positive or negative feelings following the smoking of marijuana are, in part, genetically determined. These data were obtained from interviews of monozygotic (n = 352 pairs) and dizygotic (n = 255 pairs) twins from the Vietnam Era Twin Registry. Responses to the questionnaires were statistically combined into two factors of "positive" and "negative" feelings. Using twin pair scores on these factors, the most parsimonious model explaining the variance included only the genetic component (heritability, h3 = 26.6% ("negative" factor), 28.6% ("positive" factor)) and the unique environmental component (common environment, c2 = 73.4% ("negative" factor 1), 71.2% ("positive" factor 2)). Shared environment did not contribute to the variance as also evidenced by correlations between factor scores that were more than double for the monozygotic twins compared to the dizygotic. These new models show that while unique environment -- influences such as friends, acquaintances, and communities that each twin might experience separately -- plays the major role, there is a strong biological component that determines whether an individual will feel pleasure or lack of pleasure upon trying marijuana that, in turn, has a significant influence on continued use. In fact, further data from the study show that more positive feelings after smoking marijuana predicted higher amounts of use and longer lasting smoking histories; negative feelings predicted lower amounts and shorter histories. Lyons, M.L., Toomey, R., Meyer, J.M., Green, A.I., Eisen, S.A., Goldberg, J., True, W.R., & Tsuang, M.T. How Do Genes Influence Marijuana Use? The Role of Subjective Effects. Addiction, 92 (4), 1997.

Neurochemical Alterations in Cocaine Abuse

Robert B. Innis and colleagues of the Yale University Medical School have developed neurochemical brain imaging probes that measure pre-, post-, and intra-synaptic aspects of dopaminergic transmission in the human brain using SPECT (single photon emission computed tomography). Research studies with acutely abstinent cocaine addicts are on-going to determine if numbers of DA transporters are elevated. Such an elevation would be predicted to cause diminished dopaminergic synaptic function, since an elevated number of transporters would rapidly deplete dopamine from the synapse. Also, transmitter activity alteration could be partly responsible for the addictive properties of cocaine including craving. Laruelle, M., Abi-Dargham, A., van Dyck, C. H., Rosenblatt, W., Zea-Ponce, Y, Zoghbi, S.S., Baldwin, R.M., Charney, D.S., Hoffer, P.B., Kung, H. F., & Innis, R.B. SPECT Imaging of Striatal Dopamine Release after Amphetamine Challenge. Journal of Nuclear Medicine, 36, 1996.

Abnormal Cerebral Metabolite Levels Following Drug Abuse

Perry F. Renshaw and colleagues at the Harvard Medical School have demonstrated that polydrug abusers have abnormal cerebral metabolite levels suggestive of both membrane dysfunction and cerebral bioenergetic disturbances. Differing profiles of metabolite disturbance were found for primarily cocaine dependent and primarily heroin-dependent subjects. In addition, a positive correlation was found for metabolite levels and number of weeks a heroin-dependent subject was in methadone maintenance therapy. This finding implies that successful substance abuse treatment may lead to improvements in cerebral metabolite levels and could be used to detect changes indicative of treatment response. Kaufman, M.J., Pollack, M.H., Rose, S., Kukes, T.J., Mendelson, J.H., Cohen, B.M., and Renshaw, P.F. Abnormal Cerebral Metabolism in Polydrug Abuse: Detection with Phosphorus Magnetic Resonance Spectroscopy, to be presented at the Annual Meeting of the American Psychological Association, Chicago, Illinois, August, 1997.

Therapeutic Communities in American Prisons

This chapter focuses on the application of Therapeutic Communities (TC) in prison settings including a discussion of the history of the TC model and its demonstrated effectiveness. It also discusses several of the major challenges to implementing this model in the current environment and possible new directions for working with prisoners with co-occurring substance abuse and mental health disorders. Wexler, H. Therapeutic Communities in American Prisons. In F. Cullen, L. Jones, and R.Woodward (Eds.), Therapeutic Communities for Offenders, New York: John Wiley & Sons, 1997.

Motivation and Readiness for Treatment

DeLeon and his colleagues examined the effect of motivation and readiness for treatment across different groups of drug abuses (primary cocaine, primary crack cocaine, primary alcohol, primary marijuana, and primary heroin). These investigators found few primary drug differences in the rates of retention, the overall levels of motivation and readiness, or in the persistence of the Circumstance, Motivation, Readiness, and Suitability (CMRS) for Treatment Scales. They conclude that their findings are consistent with other clinical and research findings that emphasize the importance of dynamic rather than fixed variables as determinants of treatment retention. In essence, substance abusers who are not sufficiently motivated to change, or who do not appear ready to use treatment to deal with their drug problem, are at higher risk for early dropout. DeLeon, G., Melnick, G., and Kressel, D. Motivation and Readiness for Therapeutic Community Treatment Among Cocaine and Other Drug Abusers, Am. J. Drug and Alcohol Abuse, 23(2), pp. 169-189, 1997.

[Home Page][Office of the Director][Report Index][Previous Report Section][Next Report Section]

Archive Home | Accessibility | Privacy | FOIA (NIH) | Current NIDA Home Page

National Institute on Drug Abuse

Director's Report to the National Advisory Council on Drug Abuse

May, 1997

Research Findings

AIDS Research

Salmonella Infections, HIV and Opiates

There is a substantial literature identifying Salmonella as an opportunistic infection in patients with HIV infection, of whom a substantial portion are drug abusers. A recent review (Angulo, F.J. and D.L. Swerdlow. Bacterial Enteric Infections in Persons Infected with Human Immunodeficiency Virus. Clinical Infectious Diseases, 21, Suppl l:S84, 1995) summarized recent findings on bacterial enteric infection in patients with HIV and concluded that Salmonella is a leading cause of such infections and that they are likely to be more severe, recurrent or persistent, and extra-intestinal. The fact that more extra-intestinal infections occur suggests that Salmonella can move from their portal of entry, the gastrointestinal tract, to other areas and organs, a phenomenon described in a publication in press on opioid treatment of mice. A paper entitled Morphine Induces Sepsis in Mice by Mary E. Hilburger, Martin W. Adler, Allan L. Truant, Joseph J. Meissler, Jr., Vilas Satishchandran, Thomas J. Rogers, and Toby K. Eisenstein from Temple University School of Medicine describes studies which examine the role of morphine in inducing sepsis. Mice administered morphine by the subcutaneous implantation of a slow-release pellet developed colonization of the liver, spleen and peritoneal cavity with Gram-negative and other enteric bacteria. In addition, the mice became hyper-susceptible to sublethal endotoxin challenge. The effects were blocked by the simultaneous implantation of a pellet containing the opioid antagonist naltrexone. These findings show that morphine pellet implantation in mice results in the escape of Gram-negative organisms from the gastrointestinal tract, leading to the hypothesis that morphine used post-operatively or chronically for analgesia or by drug abusers may serve as a co-factor in the precipitation of sepsis and shock. Additionally, morphine-induced sepsis may provide a physiologically-relevant model of Gram-negative sepsis and endotoxic shock.

Virus Load as a Marker of Disease Progression in HIV-Infected Children

Savita Pahwa and colleagues at North Shore University Hospital, Manhasset, New York, report that HIV-1 proviral DNA load, as determined in peripheral blood mononuclear cells by the quantitative competitive DNA polymerase chain reaction assay, is predictive of disease outcome in HIV infected children at three months of age or before. They also found that a very early dysregulation of CD95T-cell surface marker expression in such infants may have profound implications for the progression of HIV/AIDS. Tetali, S., Abrams, E., Bakshi, S., Paul, M., Oyaizu, N., and Pahwa, S. AIDS Res. Hum. Retroviruses, 12(8), pp. 669-675, 1996.

Dietary Intake of Community-Based HIV-1 Seropositive and Seronegative Injecting Drug Users

Research shows that the dietary habits of HIV-1 positive individuals are subnormal. Smit and colleagues from Johns Hopkins studied a cohort of 104 inner-city African American injecting drug users (67 men and 37 women); 45 were seropositive and 59 were negative for HIV-1. The food frequency questionnaire and a 24-hour recall were

administered to assess dietary intake of calories, fat, protein, carbohydrates, vitamins and macro- and micronutrients (e.g., selenium). HIV-1 seropositives reported higher intake of proteins, fat, B2, B12, pantothenic acid, phosphorous, and selenium as compared to the seronegatives. The intake of zinc, vitamins A and E were below the daily recommended allowances among both groups. Additional research is underway to understand the implication of dietary habits and nutritional status in the HIV-1 infected and non-infected IDUs. Smit, E., Graham, N.M.H., Tang, A., Flynn, C., Soloman, L., and Vlahov, D. Nutrition, 12, pp. 496-501, 1996.

High Risk of Mortality in HIV Infections Is Associated with Selenium Deficiency

Baum and her colleagues at the University of Miami find that selenium deficiency is an independent predictor of survival in HIV-1 infection. In a longitudinal study, a cohort of 125 HIV-1 seropositive drug-using men and women in Miami, Florida were studied over a period of 3.5 years. CD4 T-cell count, anti-retroviral treatment and plasma levels of vitamins A, E, B6, B12, selenium, and zinc were determined. Immune parameters and nutrients known to affect immune function were evaluated at 6 month intervals. A total 21 of the HIV-1 participants died from HIV related causes during the study period. Subclinical malnutrition (deficiency of vitamin A, B12, zinc, and selenium) over time, but not AZT treatment, was associated with HIV-1 related mortality independent of CD4 cell counts <200 at baseline, and CD4 over time. Data suggest that CD4 over time (RR=0.69, $p<0.04$) and selenium deficiency (RR=10.8, $p<0.002$) were significantly associated with mortality. Baum, M.K., Shor-Posner, G., Lai, S., Zhang, G., Lai, H., Fletcher, M.A., Sauberlich, H., and Page, J.B. J. Acquired Imm Def Synd and Hum Retrovir. In press.

Risk for Human Immunodeficiency Virus (HIV) Infection Among Persons With Severe Mental Illness

Kate Carey, a NIDA FIRST awardee and her colleagues at Syracuse University have found that individuals diagnosed with serious mental illness (SMI; e.g., schizophrenia, schizo affective disorder, bipolar disorder) are at enhanced risk for infection with HIV. A review of the published literature shows that 54-74% of adults who report mental illness are sexually active, and one-third report having two or more partners. Among the sexually active, condom use was inconsistent. About 4-35% also report a history of injection drug use. Overall, the data indicate that the severely mentally ill engage regularly in practices known to involve increased risk for HIV transmission (Carey, M.P., Carey, K.B., and Kalichman, S.C., Clinical Psychology Review, In press). Carey and her co-workers further piloted a six-session HIV-risk reduction intervention for 9 women and 8 men (average age of 39.8 yrs) with serious mental illness. The intervention and assessment were based on Fisher & Fisher's Information-Motivation Behavioral Skills model of HIV-preventive behavior (Psychological Bulletin, 1992). Data were collected pre-and post-intervention, and at one-month follow-up. Results showed that this brief intervention resulted in enhanced HIV-related knowledge, and trends toward enhanced skills at condom use negotiation and condom use self-efficacy. Overall, a modest decrease in risk behavior among participants was observed suggesting that HIV-related risk of the serious mental illness can be reduced through traditional behavioral skills and education methods. According to the authors, further research employing intensive interventions and baseline screening for high risk is needed. Weinhardt L.S., Carey, M.P., and Carey, K.B. HIV Risk Reduction for the Seriously Mentally Ill: A Pilot Investigation and Call for Research. J. Behav. Ther. and Exp. Psychiat., 22(2), pp. 1 10, 1997.

Factors that Impact Street Risks Through Sexual Income Generation

Drug addicted women whose economic and social base is the urban street have limited choices for income generation. These limitations often put such women in danger of predation, assault, arrest, and illness. In this context, an important source of income will often become the exchange of sex for drugs or money. Because of the legal, social, interpersonal, and safety risks associated with these exchanges, drug addicted women may not always be able to practice safe sex, raising their chances of contracting or transmitting HIV infection. These complex conditions may pressure women engaged is sexual exchanges for drugs or money to respond in a variety of ways. Street-recruited women drug users participating in NIDA's Cooperative Agreement AIDS research program in Hartford, Connecticut report a range of protective and risk behaviors when exchanging sex for drugs or money. This article discusses some of the ethnic, economic, and drug use differences among women from the street, analyzes how these differences may affect their drug and sexual risk behaviors, and describes the various approaches and significant efforts of many of these women to reduce their HIV risks. Weeks, M. Grier, M., Romero-Daza, N., et al. Streets, Drugs, and the Economy of Sex in the Age of AIDS. Women and Health, 7, In press.

Social Gatherings Facilitate HIV Risk Reduction among Drug Users

As part of an HIV risk reduction intervention for out-of-treatment drug injectors and crack smokers, the Center for Behavioral Research and Services of California State University has instituted regularly scheduled social gatherings in

the Long Beach community as a means to provide social support for modifications of HIV risk behaviors. These events are one component of a 4-to-6 month HIV risk reduction intervention that also includes HIV counseling and testing, individual and group risk reduction sessions, "support buddies," and follow-up by outreach workers. The monthly HIV focused social gatherings provide peer support and opportunities for social modeling by staff and peers, influence perceived social norms, and increase personal self-efficacy for reducing HIV risks. The socials last about 2 hours and include lunch. They are structured around risk reduction activities, including highly effective role model panels, in which outreach workers and staff with prior drug experience and clients who have successfully reduced their risk behaviors discuss a variety of topics, such as the role of social support in modifying risk behaviors, techniques for dealing with relapse and backsliding, and techniques for quitting drugs and maintaining sobriety. Over a 3-year period, 345 of the 510 active clients in the intervention program (68%) attended at least one social event, and 66% attended more than one. At follow-up, significant differences were found between clients who attended social events and those who did not: the former were more likely to report that the program helped them get off drugs, that they had discussed staying safe from AIDS with friends and family members, that they had asked an outreach worker for assistance with a personal problem, and that they were acquainted with other program participants. The popularity of these social events, which are relatively cost effective and easily implemented, makes this intervention mechanism especially valuable for maintaining the participation of active drug users in programs of this type. Wood, M. and Rhodes, F. Using Social Gatherings to Encourage HIV Risk Reduction among Drug Users. American Journal of Public Health (Notes from the Field), 86 (12), pp. 1815-1816, 1996.

Factors Related to Safe Sex Among Heterosexual Drug Injectors

Researchers in Dayton, Ohio conducted a study to determine factors which affect the self-reported use of condoms among heterosexual injection drug users and crack cocaine smokers. A total of 354 drug users (70% male and 30% female) who were enrolled in the Dayton/Columbus site of NIDA's Cooperative Agreement for AIDS Outreach/Intervention Research Program also participated in this study. Most of the study participants were single (90.1%). The largest group were current injection drug and crack cocaine users (40.1%), followed by crack users who did not inject drugs (33.1%), and injection drug users who did not use crack (26.8%). More than 70% of the participants reported that they frequently used drugs when having sex. Persons who were high when they had sex were significantly less likely to use condoms than persons who were not high, but those whose partners got high when having sex were more likely to report condom use. Individuals said that they were less likely to use condoms when they had sex with a main partner. Those who believed it was important to use condoms were more likely to use them, while persons who believed condoms reduced sexual pleasure were significantly less likely to use them. A key result of this research is that drug users frequently use substances before and during sex, which presents a significant impediment to the employment of safer-sex techniques that rely on condoms. While it is important to be sensitive to partner characteristics, it is also critical that sexual risk reduction interventions which target heterosexual users of injection drugs or crack address the widespread practice of simultaneous use of psychoactive drugs. Until such dually focused interventions are in place, access to drug abuse treatment continue to play a critical role in preventing the spread of HIV and other sexually transmitted diseases in this population. Falck, R., Wang, J., Carlson, R., and Siegal, H. Factors Influencing Condom Use Among Heterosexual Users of Injection Drugs and Crack Cocaine. Sexually Transmitted Diseases, 24(4), pp. 1-7, 1997.

Effects of Attrition on the Evaluation of an HIV Prevention Program

Attrition impacts the effectiveness of prevention interventions as well as the external validity of efficacy analyses. A recent article examines the effects of attrition on the evaluation of an HIV prevention program for out-of-treatment drug users who participated in the Cooperative Agreement for AIDS Prevention in Philadelphia. Of the 1,115 injecting drug and crack cocaine users in the program, 967 (87%) completed the 2-session HIV prevention intervention. Of these, 679 (69%) also completed the 6-month follow-up assessment. Factors related to completing the 2-session prevention intervention were different from those related to completing the longer term, 6-month follow-up assessment. Results from multiple logistic regression identified three predictors for completing the 2-session intervention, all of which were related to HIV risk behaviors: testing HIV seronegative, engaging in high risk use of needles/syringes, and ever having had a sexually transmitted disease. By contrast, predictors for completing the study (i.e., to the end of the 6 month follow-up assessment) were not related to HIV risk behaviors, but were representative of a more stable lifestyle. In particular, being a female, receiving public assistance, and living with a partner were predictive of study completion. Persons with high HIV risks, including those who were homeless and those who injected more frequently in the past 30 days, were significantly more likely to drop out from the research project. The authors suggest that research attrition analysis such as this is important for improving the appeal of interventions which target high risk and hard to-reach subgroups, for developing better procedures to track and stay in touch with clients, and for enhancing data collection methods. Lauby, J., Kotranski, L., Feighan, K., et al. Effects of Intervention Attrition and Research Attrition on the Evaluation of an HIV Prevention Program. Journal of Drug Issues,

26(3), pp. 663-677, 1996.

Risk Factors for HIV Seropositivity Among Migrant Workers in Southern Florida

As part of a NIDA Cooperative Agreement, a study was conducted to identify variables associated with HIV seropositivity among migrant workers in rural southern Florida. From 1993 to 1995, researchers enrolled 543 male and female migrant workers into the study, of whom 369 (68%) were born in the U.S. and 32% were from other countries. All of the migrant workers currently used drugs, primarily crack cocaine. Overall, 61 (11.2%) of the participants were HIV positive, including 18% of African Americans born in the U.S. as well as 8.0% of non-Hispanic Whites born in the U.S., Blacks from the Caribbean, and persons from Central or South America. Although 3.4% of Hispanic persons from Mexico were HIV seropositive, none of the U.S. or Caribbean-born Hispanics were. From logistic regression analysis, the authors identified race/ethnicity, gender, and age as significantly associated with being HIV positive. Immigration status, current drug use, and current sexual activity were not related to HIV seropositivity. These findings indicate that HIV prevention programs must address risks associated with heterosexual transmission of HIV as well as drug use both locally and where migrants travel and work. Weatherby, N., McCoy, V., Bletzer, K. et al. Immigration and HIV Among Migrant Workers in Rural Southern Florida. Journal of Drug Issues, 27(1), pp. 155-172, 1997.

Preventing AIDS in Communities of Color

Working in predominately Puerto Rican and African American communities of the inner cities, researchers in Hartford, Connecticut are witness to a widening divide between the spread of HIV among non-Hispanic whites -- generally white men who have sex with men -- and the spread of HIV in communities of color. This article describes the dramatic and increasing over-representation of AIDS cases diagnosed each year in the U.S. among communities of color, despite the work of public health and community-based educators. The authors suggest that the increases in HIV/AIDS among persons of color reflect specific shortcomings in current AIDS prevention work. For example, risk group categories may have a role in tracking and predicting the course of the epidemic, but they have little utility when used to lump individuals of differing ethnicities, cultures, and experiences into the same social category because they share a common potential route of infection. In addition, the theoretical models of motivation and behavioral change which predominate in AIDS prevention tend to focus on the individual level, with little consideration of family, communities, and the broader society. The researchers propose that the lessons learned from their work in AIDS prevention serve as guideposts for the development of new approaches to combat the epidemic in communities of color. Key among these is the need to refocus AIDS prevention as social prevention, with decreased attention on individual level prevention models and epidemiologic risk exposure categories, and much greater emphasis on three emergent contexts of AIDS risk reduction: networks, neighborhoods, and natural social groups. Singer, M. and Weeks, M. Preventing AIDS in Communities of Color: Anthropology and Social Prevention. Human Organization, 55(4), pp. 488-492, 1996.

A Systematic Method to Improve Data Collection from a Large Network of Drug Injectors

As part of the Multicultural AIDS Prevention Program in Flagstaff, Arizona -- one of the sites participating in NIDA's Cooperative Agreement for AIDS Outreach Intervention Program -- researchers have employed psychosocial and network interventions to provide knowledge, skills, and incentives to injection drug users to reduce their HIV-related risk behaviors. A major component of the study involved administration of a 27-item network questionnaire to each member of a drug network. When the researchers attempted to use the instrument with a network of more than 40 members, the problems of respondent burden and complexity of data analysis became apparent (i.e. each member in the network was asked to fill out a matrix with more than 1080 cells (27 items x 40 members) -- a condition which produced fatigue and irritation among respondents and risked a loss of precision in the data). To remedy the situation, the researchers applied Principle Components Analysis with VARIMAX rotation to systematically identify co-occurring sets of questions across eight network factor solutions, and then to identify the questions in each set which made the strongest contribution to the various factors. In this way, they were able to determine the best representative questions to keep in the questionnaire without destroying either the theoretical underpinnings for the matrix or the factors found in the empirical administration of the questions. As a result, it was possible to significantly reduce the burden on respondents from large networks, preserve the richness and complexity of the network data, and simplify the analytical computations required. Trotter, R. T., Bowen, A.M., and Hurlbert, H.J. A Method for Systematic Reduction of the Number of Questions in a Network Matrix Questionnaire. Journal of Quantitative Anthropology, 6, pp. 35-47, 1996.

Multicultural AIDS Prevention Programs

A recent volume of Drugs and Society is devoted to HIV and drug use prevention research, beginning with the initial identification of injection drug use as a key transmission vector for HIV infection, and continuing through today. Eleven of the 12 articles are by principal investigators and co-investigators in NIDA's National AIDS Demonstration Research projects (NADR) and Cooperative Agreement for AIDS Outreach/ Intervention Research Program, including, among others, John Anderson, Robert Trotter, Sherry Deren, Antonio Estrada, Mike Stark, Clyde McCoy, Isaac Montoya, Rafaela Robles, and Robert Booth. As such, the articles provide a direct historical link to "first generation" research in community-based AIDS prevention, with its successes, failures, and methodological and practical ambiguities, while also moving the science of prevention forward, into the "second generation." The presentations discuss, and in some instances resolve, key issues that will need to be addressed in the future, as the epidemiology of HIV changes and as treatment approaches improve. For example, as individuals become saturated with information about HIV transmission, it is important that they don't "tune out" and lower their behavioral risk thresholds. Trotter, R.T. (ed.). Multicultural AIDS Prevention Programs, (published also as a Special Issue of Drugs and Society, 9 ( ), 1996.

AIDS Prevention Education in a Puerto Rican Community

In a recent article, the Associate Director of the Hispanic Health Council (HHC), a community-based health research and services organization in Hartford, Connecticut, provided (1) an update and expansion of an earlier report on the 12-year evolution of AIDS prevention education work at the HHC; (2) a further examination of the contribution of applied medical anthropology to community-based AIDS prevention; and (3) a critique of assertions by some researchers about the impact of local, State, and Federal government funding on local AIDS prevention efforts and the surmountability of barriers to community-based work. The author describes how, through the application of "action anthropology," it has been possible at the HHC to focus on the twin goals of science and a specific culturally defined community. As a result, HHC has been addressing both the underlying structural causes of ill health in the Hispanic community as well as the more immediate social, cultural, medical, and environmental causes. Singer, M. The Evolution of AIDS Work in a Puerto Rican Community Organization. Human Organization, 55(1), pp. 67-75, 1996.

IDUs Understand and Retain Knowledge about Preventing Risk of HIV

A study was conducted from 1988 to 1989 in Dade County, Florida to evaluate the recall and performance skills for cleaning syringes/needles among a sample of 393 out-of-treatment IDUs. The study was guided by a question about the extent of correct cleaning of syringes. A free recall procedure, combining cognitive and psychomotor testing, provided a means of verifying knowledge and skills. Results from the study indicate that IDUs learn and retain the knowledge and skills necessary to prevent risk of HIV infection from the use of syringes/needles. Tests of knowledge and performance 6 months after training showed high retention of the material learned. The population at risk is capable of reducing the spread of HIV. Even with partial compliance with the correct cleaning procedures, some preventative impact could be assumed provided exposure time to bleach exceeds 30 seconds. McCoy, V., Chitwood, D., Page, B. et al. Skills for HIV Risk Reduction: Evaluation of Recall and Performance in IDUs. Substance Use and Misuse, 32(3), pp. 229-247, 1997.

[Home Page][Office of the Director][Report Index][Previous Report Section][Next Report Section]

Archive Home | Accessibility | Privacy | FOIA (NIH) | Current NIDA Home Page

National Institute on Drug Abuse

Director's Report to the National Advisory Council on Drug Abuse

May, 1997

Research Findings

Epidemiology, Etiology and Prevention Research

The Community Epidemiology Work Group (CEWG) met in Austin, Texas on December 9-12, 1996. The CEWG is composed of researchers from 20 selected metropolitan areas of the United States who meet semiannually to report on patterns and trends of drug abuse in their respective areas; emerging drugs of abuse; vulnerable populations and factors that may place people at risk of drug use and abuse; and, negative health and social consequences. Reports are based on drug abuse indicator data, such as morbidity and mortality information, treatment data and local and State law enforcement data. Additional sources of information include criminal justice, correctional, medical and community health data, local and State survey information and research findings from ethnographic studies. * (The most recent available DAWN data are for 1995. Increases noted are for 1994 versus 1995 data and are included only when they are reliable at $p<0.05$.)

The following are highlights of the meeting held in December 1996.

Cocaine

Crack cocaine continues to dominate the Nation's illicit drug problem, although trends are generally stable. Supplies remain abundant in nearly every city. Indicator data show leveling off in many urban areas: cocaine-related deaths were stable or up slightly in 9 of the 10 areas where such information was reported; emergency department (ED) mentions increased in only 4 of the 19 CEWG cities in the Drug Abuse Warning Network (DAWN); the percentage of treatment admissions for primary cocaine problems declined slightly or remained stable in 12 of the 14 areas where data were available; and prices of cocaine remained stable in most areas. Although demographic data continue to show most cocaine users as older, inner-city crack addicts, isolated field reports indicate new using populations: teenagers smoking crack with marijuana in blunts in some cities; Hispanic crack users in Texas; and, in the Atlanta area, middle-class suburban users of cocaine hydrochloride and female crack users in their thirties with no prior drug history.

Heroin

Quantitative indicators and field reports continue to suggest an increasing incidence of new users (snorters) in the younger age groups, often among women. In some areas, such as Boston, Newark, and San Francisco, the recent initiates increasingly include middle-class members, often from the suburbs. Concern also was expressed that young heroin snorters may shift to injecting because of increased tolerance, nasal soreness, or declining or unreliable purity. Purity has, indeed, been declining or inconsistent in some cities, such as Atlanta, Boston, and New York City. Nevertheless, purity remains high-as does intranasal use-in the East and in some midwestern cities, notably Chicago and Detroit. Supplies remain abundant. Aggressive marketing and price cutting has intensified in some cities, such as Boston, Detroit, and New York; heroin dealers often sell other drugs too, as in Miami and some Atlanta

neighborhoods. Recent mortality figures have increased or are stable at elevated levels in 5 of the 9 cities where trend data are available; rates of ED mentions have increased in 8 of the 19 cities in DAWN; and the percentage of those in treatment reporting heroin use has increased in 8 of 14 areas.

Marijuana

The resurgence in marijuana use continues especially among adolescents with rates of ED mentions increasing* in 10 cities, the percentage of treatment admissions increasing in 13 areas, and Drug Use Forecasting (DUF) percentages increasing among juvenile arrestees at numerous sites. In several cities, such as Minneapolis/St. Paul, increasing treatment figures have been particularly notable among juveniles. Two factors may be contributing to the dramatic leap in adverse consequences: (1) higher potency; and (2) use of marijuana mixed with or in combination with other dangerous drugs. Marijuana cigarettes or blunts often include crack, a combination known by various street names, such as "3750s," "diablitos," "primos," "oolies," and "woolies." Joints and blunts are also frequently dipped in PCP and go by street names such as "happy sticks," "wicky sticks," "illies," "love boat," "wet," or "tical." Both types of combinations are reported in Boston, Chicago, and New York; the marijuana-crack combinations are also sold in St. Louis; and the marijuana-PCP combinations are reported in Philadelphia and parts of Texas. In several cities, such as Atlanta and Chicago, teenagers often drink malt liquor when smoking marijuana. Marijuana cigarettes are also sometimes dipped in embalming fluid, as reported in Boston (where they are known as "shermans") and areas of Texas.

Stimulants

In several western and midwestern cities, methamphetamine indicators, which had been steadily increasing for several years, appear mixed this reporting period. All indicators suggest increases in San Francisco and Seattle, while San Diego and Los Angeles indicators show stable or slightly declining trends-however, it is too soon to predict that the indicators in those areas have peaked. Increased methamphetamine availability and use is sporadically reported in diverse areas of the country, particularly rural areas, prompting some concern about its spread outside of the areas of endemic use-the west coast. Most methamphetamine comes from large scale Mexican operations. Recent seizures in Florida have included powder cocaine, heroin, and flunitrazepam in the same shipment with methamphetamine. Additionally, local labs remain common, with seizures increasing in areas such as Seattle, Arizona, and rural Michigan and Missouri. Rural areas, such as those outside of Atlanta and St. Louis, are experiencing a much worse methamphetamine problem than urban areas. All four routes of administration-injecting, snorting, smoking (including "chasing the dragon" in San Francisco), and oral ingestion-are used but vary extensively from city to city. Reports of methamphetamine-related violence persist in Honolulu and are now also occurring in Seattle.

Methylphenidate (Ritalin) abuse continues among heroin users in Chicago and adolescents in Detroit. Methcathinone ("cat" or "goobs") has been reported in several indicators in Detroit and Michigan's Upper Peninsula, including treatment admissions and one death in Detroit. Ephedrine based products sold at convenience stores, truck stops, and health food stores are common among adolescents in Atlanta, Detroit, Minneapolis/St. Paul, and Texas. New York State recently banned the sale of such products in an attempt to curb escalating abuse among adolescents. Methylene dioxymethamphetamine (MDMA or "ecstasy") use was reported-most often among young adults and adolescents at clubs, raves, and rock concerts in Atlanta, Miami, St. Louis, Seattle, and areas of Texas.

Depressants

Use of gamma hydroxybutrate (GHB) in the club scene is becoming more widespread throughout the country, notably in Atlanta, Detroit, Honolulu, Miami, New York City (where it is also reportedly used by fashion models), Phoenix, and Texas. Ketamine ("Special K") use in nightclubs has also been reported in several cities. A mixture of GHB, ketamine, and alcohol, called "Special K-lude" because of the similar effects produced by methaqualone (Quaalude), is reported in New York City. Flunitrazepam (Rohypnol) use continues in many areas of the country (with the exception of the Northeast), most notably in Texas and Florida. Its widespread availability has declined, however, since the Federal ban on its importation. Other medications from the same manufacturer are now being sold and abused as "roofies" in Miami, Minnesota, and Texas. These drugs include clonazepam (another pharmaceutical benzodiazepine, marketed in Mexico as Rivotril), which has the same distinguishing manufacturer's imprint as flunitrazepam. Clonazepam (marketed in the United States as Klonopin) is also used by addicts in Atlanta and Minneapolis/St. Paul to enhance the effects of methadone and other opiates.

Hallucinogens

According to field reports in numerous areas, such as Boston, Chicago, Philadelphia, St. Louis, Texas, and Washington, DC, phencyclidine (PCP) is often used in combination with other drugs. The most frequently reported combination is joints or blunts containing marijuana mixed with or dipped into PCP. However, in other cities, such as Los Angeles and New Orleans, PCP is most commonly purchased as a predipped cigarette. In New York City, PCP is

combined with crack in "spaceballs." PCP ED mentions increased in 10 cities, but rates remain relatively low. Lysergic acid diethylamide (LSD) remains widely available in most CEWG cities, especially in suburban and rural areas. Use of psilocybin mushrooms has also been reported among adolescents and young adults in Boston, Minneapolis/St. Paul, and Philadelphia.

Mexico and Canada

While Mexico remains a primary supplier and transshipment point of drugs into the United States, it is also coping with drug abuse problems of its own. Cocaine is the most common primary substance of abuse among treatment admissions, followed by marijuana, inhalants, and alcohol. Flunitrazepam (Rohypnol) is particularly common among cocaine abusers. Heroin has not appeared at high levels in the indicator data, although use is higher in the border regions. Conversely, indicator data in Toronto, Canada, show heroin use has increased dramatically in the past several years, especially among younger users. Survey data also show dramatically increased marijuana use among teenagers. Similar to the United States, however, cocaine remains Toronto's primary illicit drug, but indicators appear relatively stable.

Five Year Follow-Up Results of The Effectiveness of Drug Abuse Resistance Education (Project DARE)

This article reports the results of a 5-year, prospective longitudinal evaluation of the effectiveness of Drug Abuse Resistance Education (DARE), a school-based primary drug prevention curriculum designed for introduction during the last year of elementary school. Twenty-three elementary schools were randomly assigned to receive DARE and 8 were designated comparison schools. No significant differences were observed between intervention and comparison schools with respect to cigarette, alcohol, or marijuana use during the 7th grade, approximately one year after completion of the program, or over the full 5-year measurement period. Significant intervention effects in the hypothesized direction were observed during the 7th grade for measures of students' general and specific attitudes toward drugs, the capability to resist peer pressure, and estimated level of drug use by peers. Over the full measurement interval, however, average trajectories of change for these outcomes were similar in the intervention and comparison conditions. The findings of this study are largely consonant with the results obtained from prior short-term evaluations of the DARE curriculum, which have reported limited effects of the program upon drug use, greater efficacy with respect to attitudes, social skills, and knowledge, but a general tendency for curriculum effects to decay over time. The results of this study underscore the need for more robust prevention programming targeted specifically at risk factors, the inclusion of booster sessions to sustain positive effects, and greater attention to interrelationships between developmental processes in adolescent substance use, individual level characteristics, and social context. Clayton, R.R., Cattarello, A.M., Johnstone, B.M. The Effectiveness of Drug Abuse Resistance Education (Project DARE): 5-Year Follow-Up Results. Preventive Medicine, 25, pp. 307-318, 1996.

Insolubility of Heroin Linked to Syringe Sharing

Over an 18-month period, researchers conducted interviews with three separate samples of heroin injectors in two inner-city Chicago communities. A large majority from each sample (85% of sample 1, n=39; 72% of sample 2, n=417; and 81% of sample 3, n=400) reported that their heroin clogged their needles/syringes. In each of the respective samples, 55%, 28%, and 19% of the heroin injectors said they had shared needles/syringes with others because heroin has clogged works. The researchers explored the reasons for the widespread "jelling-up" of heroin in the Chicago area, and identified several conditions under which inappropriate diluents and adulterants are used to "cut" heroin: control and dominance of the heroin market by gangs, ignorance of proper diluents and adulterants, and the emergence of a dual market (intranasal, injecting) for heroin. The authors discuss the implications of these factors in terms of preventing the spread of HIV and other infections among heroin injectors and their partners. Furst, R., Nettey, R., Wiebel, W. et al. "The 'Jelling-Up of Dope:' Implications for the Transmission of HIV Among IDUs." Addiction Research, 4(4), pp. 309-320, 1997.

Demographic and Psychosocial Risk for Alcohol Use: Ethnic Differences

NIDA supported researchers examined the influence of demographic variables and social (parents and peers), attitudinal, and intentions variables regarding alcohol use on actual drinking behavior among Asian and white populations. Asian (n=148; 79 female, 69 male) and white (n =132; 72 female, 60 male) college students completed a questionnaire. Confirmatory factor analyses revealed that social and attitudinal factors reflected a common construct of psychosocial vulnerability which, in a structural equation model, was significantly predicted by ethnicity. The white population was exposed to more psychosocial risks to alcohol use compared to the Asian population. Ethnicity, however, did not directly predict either drinking intentions or drinking behavior, after the effects on Psychosocial Vulnerability were considered. These findings suggest that ethnic differences in alcohol use between

Asians and whites are mainly due to different levels of exposure to risk factors. Effective prevention programs must consider, not only psychosocial factors, but also certain contextual factors such as sex and ethnicity. Keefe, K., and Newcomb, M.D. Demographic and Psychosocial Risk for Alcohol Use: Ethnic Differences. Journal of Studies on Alcohol, 57, pp. 521-530, 1996

Influences of Parental Drug Use, Personality, and Child Rearing on the Toddler's Anger and Negativity

How parental personality and drug use and the parent-child relationship are related to a toddler's anger and negativity was investigated. The sample consisted of 62 female and 53 male 2-year-old children and their parents. The results supported a mediational model. The father's drug use and parental personality attributes were linked to the child's anger and negativity indirectly, through the parent-child relationship. The findings indicated that maternal personality and child-rearing practices had a greater effect on the child than the paternal characteristics or the father-child relationship did. The results also suggested that the effect of one parent on the child was altered by the relationship the child had with the other parent. Implications for prevention and treatment are discussed. Brook, J.S., and Tseng, L. Genetic, Social and General Psychology Monographs, Heldref Publications, 1996.

Toddler Adjustment: Impact of Parents Drug Use, Personality, and Parent-Child Relations

The intercorrelations among parents' drug use, personality, and parent-child relations and the child's anxious/regressive behaviors were investigated in a sample of 2-year-olds (N=115). The results indicate that maternal child-rearing practices mediate the effect of maternal personality attributes on the child's intrapsychic functioning. The father's drug use had a direct influence on the child's reflective behavior. Generally, the mother's drug use, personality, and child-rearing practices were more important than the father's attributes. However, the father's drug use had a strong impact on the child when it interacted with the mother's drug use. Parental differences and implications for prevention are discussed. Brook, J.S., and Tseng, L. The Journal of Genetic Psychology, 157(6), 1996.

Childhood Antecedents of Adolescent Personality Disorders

The purpose of this study was to investigate the childhood antecedents of personality disorders that are diagnosed in adolescence. A randomly selected community sample of 641 youths was assessed mutually in childhood and followed longitudinally over 10 years. Childhood behavior ratings were based on maternal reports: diagnosis of adolescent personality disorders were based on data obtained from both maternal and youth informants. Four composite measures of childhood behavior problems were used: conduct problems, depressive symptoms, anxiety/fear, and immaturity. Adolescent personality disorders were considered present only if the disorders persisted over a 2-year period. For all analyses, personality disorders were grouped into three clusters (A, B, and C) of DSM-III R. Logistic regression analyses indicated that all four of the putative childhood antecedents were associated with greater odds of an adolescent personality disorder in all three clusters, even when other childhood problems were included in the same regression model. Additionally, depressive symptoms emerged as an independent predictor of cluster B personality disorders in girls. No monitoring effects of age at time of childhood assessment were found. These results support the view that personality disorders can be traced to childhood emotional and behavioral disturbances and suggest that these problems have both general and specific relationships to adolescent personality functioning. Bernstein, D.P., Cohen, P., Skodol, A., Bezirganian, S., and Brook, J.S. Childhood Antecedents of Adolescent Personality Disorders. American Journal of Psychiatry, 153(7), pp. 907-913, 1996.

Depression Spectrum Disease

This study used an adoption study design to separate genetic from environmental factors in the etiology of depression spectrum disease, a type of major depression characterized by families in which male relatives are alcoholic and females are depressed. The genetic etiology hypothesis of depression spectrum disease proposes that an alcoholic genetic diathesis predisposes to depression in females but alcoholism, not depression, in males. The study examined 197 adult offspring (95 male and 102 female) of alcoholic biological parents and used logistic regression models to determine the contribution to major depression in male and female adoptees that could be explained by the genetic alcoholic diathesis combined with an environmental factor that was characterized by psychiatrically or behaviorally disturbed adoptive parents. Major depression in females was predicted by an alcoholic diathesis only when combined with the disturbed adoptive parent variable. The same regression model failed to predict depression in males. Other possible environmental confounding factors contributing to an increased chance of depression were found in females: fetal alcohol exposure, age at the time of adoption, and a family with an adopted sibling who had a psychiatric problem. These variables did not diminish the significance of the prediction of depression with the alcohol genetic

diathesis and disturbed parent model. Conclusions were that a genetic factor is present for which alcoholism is at least a marker, and which exerts its effect in women as a gene-environment interaction leading to major depression. This finding suggests that an important etiologic factor in depression spectrum disease is gene-environment interaction. The results are important for the substance abuse field because of the lasting effect upon female children of alcoholics and the additional fact that long term follow-up of females with depression spectrum disease find an increase in later life substance abuse. Cadoret, R.J., Winokur, G., Langbehn, D., Troughton, E., Yates, W.R., and Stewart, M.A. Depression Spectrum Disease, I: The Role of Gene-Environment Interaction. American Journal of Psychiatry, 153(7), pp. 892-899, 1996.

An Adoption Study of DSM-IIIR Alcohol and Drug Dependence Severity

The objective of this study was to evaluate the role of genetic factors in alcohol and drug dependence at various levels of DSM-IIIR psychoactive substance dependence severity. One-hundred ninety seven adoptees (95 case adoptees with biological parental alcoholism, drug dependence or antisocial personality disorder and 102 control adoptees) were interviewed for the presence of alcohol abuse or dependence and drug abuse or dependence using the Diagnostic Interview Schedule-DISIIIR. Adoptees with five or more DSM-IIIR criteria for alcohol dependence demonstrated evidence of a genetic effect using this adoption paradigm. Adoptees with one or more DSM-IIIR criteria for drug dependence demonstrated a genetic effect. This study suggests genetic factors influence the risk for alcohol and drug dependence at different thresholds of severity as determined by DSM-IIIR symptom severity count and that consideration of thresholds of diagnosis are important in determining the outcome of genetic studies. Yates, W.R., Cadoret, R.J., Troughton, E., and Stewart, M.A. An Adoption Study of DSM-IIIR Alcohol and Drug Dependence Severity. Drug and Alcohol Dependence, 41, pp. 9-15, 1996.

The Developmental Interface Between Nature and Nurture

In a collaborative study between a consortium of investigators, an adoption paradigm was used to explore a mechanism through which heritable characteristics of adopted children evoke adoptive parent responses. The study focused upon adoptee hostile/antisocial behavior. Subjects were 25 male and 20 female adoptees (separated at birth from biologic parents and placed with non-relatives) and their adoptive parents. Subjects ranged from 12-18 years of age and were selected on the basis of psychopathology reported in biologic parents as determined from hospital and prison records. Antisocial personality and substance abuse were the principal diagnoses in biologic parents. Behavioral observations were made of adoptive parent interactions with their adopted adolescent on a variety of problem-solving tasks. Structural equation modeling demonstrated that psychiatric disorders in the biologic parents correlated positively with their adopted-away offspring's antisocial/hostile behaviors. In turn, the adoptee antisocial/hostile behaviors were associated with harsh/inconsistent disciplinary behaviors in both adoptive mother and father. These results are consistent with an evocative model in which a child's heritable characteristics influence parental practice as a mediator. Further modeling developed evidence for a mutual influence of behaviors between mother's disciplinary practices and adoptee hostile/antisocial behaviors. The results demonstrate the importance of parenting practices in affecting (and being affected by) child behavior, and are relevant to the prevention of behaviors which are known to be associated with substance abuse. Ge, X., Conger, R.D., Cadoret, R.J., Neiderhiser, J.M., Yates, W., Troughton, E., and Stewart, M.A. The Developmental Interface Between Nature and Nurture: A Mutual Influence Model of Child Antisocial Behavior and Parent Behaviors. Developmental Psychology, 32, pp. 574-589, 1996.

Perceived Control and Environmental Predictability Buffer Adolescents from Effects of Parental Alcoholism

Researchers at Arizona State University examined protective factors that may protect adolescents from risks associated with parental alcoholism. Using data from their longitudinal study of adolescents in alcoholic families and demographically matched controls, they compared a subsample of 179 adolescents who abstained from substance use during a 3-year measurement interval with 88 initial abstainers who began to use substances over this period. Predictor variables were derived from computer-assisted interviews at the time of initial measurement when adolescents were 11-15 years of age. Results showed that COAs, older adolescents, and adolescents from disorganized home environments were more likely to initiate substance use than were non-COAs, younger adolescents, and those from homes high in family organization. Moreover, high levels of perceived control and very high or very low levels of coping buffered the risk for substance use initiation that was associated with parental alcoholism. The findings suggest that preventive interventions might either 1) attempt to increase predictability and organization of the home environment or 2) increase adolescents' abilities to cope with these environments, and thus increase their levels of perceived control. Hussong, A. and Chassin, L. Substance Use Initiation Among Adolescent

Children of Alcoholics: Testing Protective Factors. Journal of Studies on Alcohol, 58(3), pp. 272-279, 1996.

Comorbidity and Boundaries of Affective Disorders with Anxiety Disorders and Substance Misuse: Results of an International Task Force

Associations between affective disorders, anxiety disorders and substance use disorders were examined in epidemiological studies conducted in Germany, Switzerland, Puerto Rico, and the mainland U.S. There was a remarkable degree of similarity across studies in the magnitude and type of specific disorders associated with the affective disorders. Comorbidity with affective disorders was greater for the anxiety disorders than for substance misuse. Panic disorder was the subtype of anxiety that was most highly comorbid with depression. Social phobia was the specific phobic type with the strongest association with the affective disorders. The magnitude of associations between substance misuse and affective disorders generally was quite low and less consistent across sites. No major differences were found in the patterns of comorbidity by gender or age group, affective subtype or prevalence period. The onset of anxiety disorders generally preceded that of depression, whereas alcohol misuse was equally likely to pre- or post-date the onset of affective disorders. Finally, comorbidity was associated with an elevation in treatment rates across all sites, confirming Berkson's paradox on an international level. Merikangas, K.R., August, J., Eaton, W., Canino, G., Rubio-Stipec, M., Wacker, H., Wittchen, H.U., Andrade, L., Essau, C., Whitaker, A., Kraemer, H., Robins, L.N., and Kupfer, D.J. British Journal of Psychiatry, 168 (30), pp. 58 67, 1996.

Substance Abuse, Comorbidity, and Sensation Seeking: Gender Differences

Two hundred sixty-two probands and 261 of their relatives with DSM-III-R diagnoses of drug and alcohol abuse and/or anxiety disorders completed the Zuckerman Sensation Seeking Scale. It was hypothesized that subjects with both substance abuse disorders and comorbid anxiety disorders would have lower sensation-seeking profiles than subjects with substance abuse alone. This was confirmed in women, with thrill- and adventure-seeking scores showing significant differences between pure substance abusers and those with a comorbid anxiety disorder, lending support of theories that substance abusers are a heterogeneous group. In men, there were fewer significant differences between diagnostic groups. If substance abusers are indeed a heterogeneous group, with some motivated by high sensation-seeking needs, a better understanding of these motivations can lead to more effective strategies of prevention and treatment, according to etiology. Scourfield, J., Stevens, D.E., and Merikangas, K.R. Comprehensive Psychiatry, 37(6), pp. 384-392, 1996.

Gender Related Differences in Circumstances Surrounding Initiation and Escalation of Alcohol and Other Substance Use/Abuse

A series of multivariate logistic regression models specifying the effects of gender and other variables on the initiation and escalation of alcohol and other substance use/abuse was estimated. The sample consisted of 6,074 young adults from a general population who participated in a longitudinal study that began in 1971. The original target sample consisted of a random sample of all seventh grade students (N=9,335) in the Houston Independent School District. A follow-up study of these students in the 1980's, when the subjects were in their mid-20's, resulted in the successful interview of 6,074 subjects. After controlling for race, ethnicity, father's education, and a tendency to over-or under endorse statements, the effects of gender on circumstances surrounding initiation/escalation of binge drinking, marijuana use, and use of other illicit drugs were found. The statistical analysis indicated that males tended to show a need to enhance sense of self-importance through use of alcohol and other substances and to report that they feel more important or more powerful for having done it. In addition, males seek social bonding through the use of alcohol or drugs. Females, however, resort to alcohol and other substances because of personal problems such as having a serious argument with a significant other, feeling angry at someone or something, or having troubles too great to bear. Females' use of alcohol or drugs for self-medication was also suggested by their greater tendency to report use proximate to experiences of feeling down emotionally or feeling worthless, and by their reports of feeling less depressed following use. This research asserts that, in multivariate context, gender differentiation is found in the perceptions of the circumstances surrounding the initiation and escalation of substance use/abuse. Liu, X., and Kaplan, H. Gender-Related Differences in Circumstances Surrounding Initiation and Escalation of Alcohol and Other Substance Use/Abuse. Deviant Behavior, 17(1), pp. 71-106, 1996.

Moderating Effects of Gender on the Relationship Between Not Graduating from High School and Psychological Dysfunction in Young Adulthood

This study compares the strength of the relationship between dropping out of high school and subsequent changes in the latent construct "adult psychological dysfunction". This relationship is considered separately for males and

females so that the moderating effect of gender on the impact of not graduating from high school on psychological dysfunction in adulthood can be examined. Thus, this study estimates two male-female sets of models, and then estimates a third set of models that specifies the differential effects of starting college on the psychological functioning of female and male adolescents. The data for this analysis were collected from a longitudinal study of young adolescents that was designed to determine the precursors of a variety of deviant behaviors. The sample data were taken from the responses obtained during the first (Time 1) and fourth (Time 4) waves of data collection and produced a final sample N=4,681 (2,130 males and 2,551 females). The raw data were used as input for LISREL VII to estimate the structural models. Results from the first and second models suggest a negative effect of not graduating on psychological functioning for both male and female students. Results from the third analysis indicate gender effects such that adult psychological dysfunction is more likely to be negatively related to college attendance for females than it is for males. This research illustrates the importance of gender specific effects of high school graduation and college attendance on adult psychological dysfunction. Kaplan, D.S., Damphouse, K.R., and Kaplan, H.B. Moderating Effects of Gender on the Relationship Between Not Graduating from High School and Psychological Dysfunction in Young Adulthood. Journal of Educational Psychology, 88(4), pp. 760-774, 1996.

Women Convicted of Homicide had Drug Use Histories Similar to Men Convicted of Homicides

In a sample of 589 women convicted of homicide, 70% reported being regular users of drugs and alcohol prior to committing the homicide. The women were also as likely as male convicts to have long criminal histories of violent and non-violent crimes and to have been involved in the crack trade business. Spunt, B., Brownstein, H., Crimmins, S., et al. Drugs and Homicide by Women. Substance Use and Abuse, 31(7), pp. 825-845, 1996.

Young Adult Drug Use and Delinquency: Childhood Antecedents and Adolescent Mediators

The aims of this study were to examine the childhood, early adolescent, and late adolescent predictors of young adult drug use and delinquency; and to explore the effects of drug use on delinquent behavior. Data were gathered during the course of a 20-year longitudinal study of children representative of the Northeast. Data were gathered on childhood aggression, early and late adolescent drug use and delinquency, and young adult drug use and delinquency. Overall, the results were consistent with the proposed model. Drug use and delinquency during early and late adolescence served as the mediator between childhood aggression and young adult drug use. Adolescent drug use was associated with later delinquency. The findings indicated that childhood aggression was related to both young adult drug use and delinquency. Second, there was stability of drug use and delinquency between early adolescence and young adulthood. Third, drug use during early adolescence had an impact on delinquency not only in early adolescence, but also in late adolescence and young adulthood. The findings suggest that a decrease in drug use during adolescence should go a long way to decreasing delinquency in early and late adolescence and in young adulthood. Brook, J.S., Whiteman, M., Finch, S.J., and Cohen, P. Young Adult Drug Use and Delinquency: Childhood Antecedents and Adolescent Mediators. Journal of the American Academy of Child Adolescent Psychiatry, 35(12), pp. 1584-1592, 1996.

A Structural Model of Dropout Behavior: A Longitudinal Analysis

Using four wave panel data, a theoretically informed structural model of junior high school antecedents of high school dropout behavior is estimated. The model specifies a linkage between negative school experiences, both academic and disciplinary, and later dropout behavior that is mediated by self derogation in a school context and a contranormative behavior including both avoidant/ withdrawal and deviant acting out behavior. The data for this analysis were drawn from a four-wave panel study of all of the seventh grade students in a random half of the 36 junior high schools of the Houston Independent School District in 1971. The students were again tested in 1972 (Time 2), 1973 (Time 3), and in the 1980's (Time 4). A total of 2,428 students were present for all four tests, after a listwise deletion of missing values for those present, the final N=1,714. Estimation of the model provided strong support for the theoretically predicted relationship between students' self-rejecting feelings in a school setting, stimulated by their negative academic experiences, and their likelihood of dropping out of high school within three to five years. The relationship is mediated by truancy behavior during junior high school, and the relationship still holds after introducing control variables. In general, this study illustrates the important finding that patterns of academic failure and deviant behavior are established early for some students and that monitoring and intervention, if necessary, of students might reduce dropout behavior. Kaplan, D.S., Peck, B.M., and Kaplan, H.B. A Structural Model of Dropout Behavior: A Longitudinal Analysis. Applied Behavioral Science Review, 3(2), pp. 177-193, 1996.

School-Dropout Distortions in Adolescent Substance Use Rates Greater for Native Americans and Hispanics than for Non-Hispanic Whites

Researchers at the Tri-Ethnic Center for Prevention Research at Colorado State University examined how including data on drug use by school dropouts can alter estimates of adolescent drug use rates, and how the effects of dropouts vary across racial/ethnic groups represented in that Center. Rates of self-reported lifetime and past-30-day substance use were obtained from Mexican American, White non-Hispanic, and Native American students (n = 738) and dropouts (n = 774). Rates for the age cohort (students and dropouts) were estimated with a weighted correction formula. Rates of use reported by dropouts were 1.2 to 6.4 times higher than those reported by students. Rates of dropping out are higher for American Indians and Hispanics than for White non-Hispanics, and correction for dropouts differentially affects estimates for the respective groups. When only in-school data are available, errors in estimating drug use among groups with high rates of school dropout can be substantial. Correction of student-based data to include drug use of dropouts leads to important changes in estimated levels of drug use and alters estimates of the relative rates of use for racial/ethnic minority groups with high dropout rates. Swaim, R.C., Beauvais, F., Chavez, E.L., and Oetting, E.R. The Effect of School Dropout Rates on Estimates of Adolescent Substance Use Among Three Racial/Ethnic Groups. American Journal of Public Health, 87(1), pp. 51-55, 1997.

Racial/Ethnic Variations in Validity of Self-Report of Smoking

In a study using both self-report and a criterion physiological measure, Drs. Wills and Cleary compared the validity of self-reports of smoking across racial/ethnic groups and concluded that the lower smoking rates reported for African-American adolescents are real and are not substantially a consequence of reporting artifacts. Previous research has raised a question about the validity of self-report for African Americans. In this study, self-report of cigarette smoking was obtained together with a measure of carbon monoxide from expired air. Convergence between self-reported smoking and the biochemical measure was analyzed separately for three ethnic groups at 7th grade, 8th grade, 9th grade, and 10th grade. Analyses indicated that the validity of self-reports of smoking was generally comparable across ethnic groups. Sensitivity and specificity were comparable with data reported in recent meta-analyses. Though sensitivity was slightly lower for minority adolescents than for White adolescents, prevalence rates corrected for group differences in sensitivity showed significantly lower smoking rates for African-American and Hispanic adolescents than for White adolescents. Wills, T.A. and Cleary, S.D. The Validity of Self-Reports of Smoking: Analyses by Race/Ethnicity in a School Sample of Urban Adolescents. American Journal of Public Health, 87(1), pp. 56-61, 1997.

Differences in Thinking Versus Behavior in Middle and High School Females Concerning Drug Use and Eating Disorders

To evaluate differences as a function of age in middle-school versus high school females in terms of drug use and eating disorders a survey of more than 2,000 young women showed no significant differences across many risk behaviors; use of tobacco, alcohol, cocaine, diet pills, supplements, vitamins, self-induced vomiting or intent to use any of these in the future. However, these females did differ significantly in that the younger females displayed less knowledge of the adverse consequences of these behaviors, they perceived less prevalence of these behaviors among their peers, and expressed less belief in the media. While prevention programs for high school girls may be too late to deter experimentation, the results of this study underscore the need for intervention at an earlier age; at a time when critical knowledge items and attitudes are not yet firmly established. Clarke, G., Goldberg, L, Moe, E., Poole, L., and Witherrite, T. Young Women's Disordered Eating and Drug Use: Do Middle and High School Students Differ? To be presented at the American College of Sports Medicine, Denver, May 1997 and published in Medicine and Science in Sports and Exercise, Vol. 29-S, 1997.

High Rates of Drug and Alcohol Use Found Among Women Who Kill Children

Researchers in New York City interviewed 42 imprisoned women who were convicted for killing children. The majority of women (67%) reported using drugs and/or alcohol 3 or more days per week for a month. Most commonly used drugs were marijuana (by 26% of the women), alcohol (by 19%), and tranquilizers (by 17%). Sixty percent of the sample also reported coming from homes where drugs/alcohol were used daily. Crimmins, S., Langley, S., Brownstein, H.H., and Spunt, B. Convicted Women Who Have Killed Children. Journal of Interpersonal Violence, 12(1), pp. 49-69, 1997.

Factors Associated with a History of Firearm Injuries in Juvenile Drug Traffickers and Violent Juvenile Offenders

Firearm injuries have reached epidemic proportions with both juvenile and adult correctional populations. Relatively

little is known, however, about the individual and community factors associated with an increased risk for violence in offender populations. Understanding these correlates of violent victimization would represent the first step in the identification of putative risk factors; permitting the development of meaningful and effective prevention programs. The primary objective of the present study was to develop a model of individual and community factors associated with firearm injury prevalence in a sample of incarcerated juvenile drug traffickers (N=217), and violent juvenile offenders (N=239). The results indicated that the pattern of offending, drug selling or violence, was important in determining the particular factors associated with firearm injuries in juvenile offenders. The results were consistent with the hypothesis that juvenile drug traffickers may have been injured as a result of a general inability to function effectively within the drug trafficking arena, or adequately judge victimization. The profile that emerged for the injured violent offenders suggested that they may have precipitated a violent attack through an aggressive interfactional style, or the predatory nature of their offending. A preliminary review of community variables indicated that the firearm injury prevalence for the two different offender groups varied across locality, again suggesting that community or environmental factors may interact with offending in defining the overall risk or injury. McLaughlin, C.R., Reiner, S.M., Smith, B.W., Waite, D.E., Reams, P.N., Joost, T.F., and Gervin, A.S. Factors Associated with a History of Firearm Injuries in Juvenile Drug Traffickers and Violent Juvenile Offenders. Free Inquiry - Special Issue: Gangs, Drugs and Violence, 24(2), p. 157, 1996.

Female Drug Injectors are Often Peripheral Members of Drug Injection Networks

Female injection drug users (IDUs) reported their usual link to drug injection networks to be by way of their male IDU sex partner. The peripheral or subordinate network positions of women IDUs may explain why they often engage in high risk behaviors. Su, S.S. and Gerstein, D. Understanding Barriers to Positive Behavioral Changes Among Injection Drug Users: A Social Network Approach. Paper presented at the International Sunbelt Social Network Conference, Charleston, SC, 1996.

Children Learn to Model Aggression and Violent Behavior of Adult Crack Sellers/ Abusers

A large ethnographic study was conducted to identify and describe the intergenerational processes by which behaviors are modeled, learned, and practiced. Researchers studied one large kin network in Harlem where the adults used alcohol, crack, and other illicit drugs and were actively involved in the drug trade. In this family system, the children observed that adults often fought over drugs or money and feuded while under the influence of crack and alcohol. They used aggression and violence against family members as retribution or punishment for previous aggressive and violent acts. Aggressive language and excessive profanity were routine adult behaviors and a major means of communication; jokes and insults led to arguments, often followed by fights. Most adults who had been abused physically or sexually as children did the same to their own. Children in this large family rarely obtained special attention and support, and had almost no opportunity to learn nonaggressive patterns. Instead, the children learned to model adult behaviors, such that the intergenerational transmission of aggression and violence was well established in this kin network. Dunlap, E., Johnson, B.D., and Rath, J. Aggression and Violence in Households of Crack Sellers/Abusers. Applied Behavioral Science Review, 4(2), pp. 191-217, 1996.

Powerlessness, Exploitation, and Degradation of Women in the Inner-City Crack Culture

Ethnographic studies of female crack sellers and commercial sex workers were conducted in New York City. Almost all of the women came from poor, precariously housed families and most had lost support from their families and friends because of their crack use. Single Room Occupancy or "welfare" hotels and shelters were viewed as criminogenic and dangerous. A few of the women "slept rough" or squatted curbside, but usually with a man. The most common alternative living arrangement of these women was with an older man with a dependable income for a period of time. In exchange, women typically provided the men with sex, drugs, domestic services, or companionship. Several women avoided crackhouses and shooting galleries by living in so-called "freakhouses" with other women, where they would provide entertainment and sex to men in exchange for crack and other drugs. Although these women of the inner-city crack culture were typically impoverished -- without a regular place to live, sleep, bathe, eat, and store their possessions -- they were rarely homeless and living on the streets. Rather, they tended to find alternative living arrangements which reinforced their powerlessness and reflected their high levels of sexual exploitation and degradation. Maher, L., Dunlap, E., Johnson, B., and Hamid, A. Gender, Power, and Alternative Living Arrangements in the Inner-City Crack Culture. Journal of Research on Crime and Delinquency, 33(2), pp. 181-205, 1996.

Exposure to Adult Substance Use as a Risk Factor in Adolescent Substance Use Onset: Part I

Little is known about the nature of parental influence on the initiation of drug use and subsequent rates of

progression through increasingly more advanced stages of substance use. This study suggests that substance use by important adults is a potent risk factor for adolescent substance use experimentation. The risk appears to hold least for tobacco, an intermediate amount for alcohol, and most for marijuana. There is a risk associated with exposure to any one, any two, or all three substances. This report outlines a study designed to assess the impact of exposure to adult substance use on adolescents' progression through increasingly more advanced stages of substance use. Latent Transition Analysis was used to estimate the probabilities of adolescents' belonging to each of nine progressively more advanced stages of adolescent substance use conditional on exposure to adult substance use at each of three times of measurement. Additionally, the probabilities of adolescents moving from one stage in the onset process to another were estimated, conditional on adult substance use. The results show that adolescents reporting exposure to adult use of alcohol, tobacco, or marijuana are more likely to be further advanced in the onset process at each of the junior high school years, grades 7 through 9. The results for exposure to adult use of marijuana are most pronounced. Tracy, A.J., Collins, L.M., and Graham, J.W. Exposure to Adult Substance Use as a Risk Factor in Adolescent Substance Use Onset: Part I. The Methodology Center Technical Report Number 97-13, College of Health and Human Development, The Pennsylvania State University, 1997.

Volatile Solvent Use: Patterns by Gender and Ethnicity Among School Attenders and Dropouts

Differences in patterns of volatile solvent use were explored using self report, with specific focus on the relationship to school enrollment status -- dropout, enrolled but academically at-risk, and control. The sample included American Indian, Mexican American and White American youth. Findings indicated that a higher proportion of the dropout cohort have used volatile solvents, used them regularly and with more intensity than the other two groups. There was also an interaction between gender and ethnicity. Bates, S.C., Plemons, B.W., Thurman-Jumper, P., and Beauvais, F. Volatile Solvent Use: Patterns by Gender and Ethnicity Among School Attenders and Dropouts. Drugs and Society 10( ), pp. 59-75, 1997.

Timing of Paternal Substance Use Disorder Cessation and Effects on Sons' Problem Behavior

Investigators at the Center for Education and Drug Abuse Research (CEDAR) at the University of Pittsburgh report research suggesting that the sensitive period for the influence of fathers' substance use disorder (SUD) on sons' behavioral problems starts when the sons are around six years old. In an examination of the developmental timing of effects of paternal SUD offset on internalizing and externalizing problem behaviors in prepubertal sons, no differences were found between sons of control (SUD-) fathers (n=92 father-son pairs) and SUD+ fathers (n=149 father-son pairs) whose SUD ended before the son's sixth birthday. However, when paternal SUD extended beyond the boys' sixth year, significant increases in these types of problem behaviors were found. These results suggest the importance of early intervention to reduce paternal SUD in order to prevent intergenerational transmission of behavioral problems, and of substance abuse, given that externalizing behavioral problems in male children and adolescents are among the best predictors of subsequent substance abuse in early and late adolescence. Moss, HB; Clark, DB; and Kirisci, L. Timing of Paternal Substance Use Disorder Cessation and Effects of Problem Behaviors in Sons. American Journal on the Addictions, 6(1), pp. 30-37, 1997.

Modeling the Etiology of Adolescent Substance Use: A Test of the Social Development Model

The social development model is a general theory of human behavior that seeks to explain antisocial behaviors through specification of predictive developmental relationships. It incorporates the effects of empirical predictors ("risk factors" and "protective factors") for antisocial behavior and attempts to synthesize the most strongly supported propositions of control theory, social learning theory, and differential association theory. This article examines the power of social development model constructs measured at ages 9 to 10 and 13 to 14 to predict drug use at ages 17 to 18. The sample of 590 is from the longitudinal panel of the Seattle Social Development Project, which in 1985 sampled fifth grade students from high crime neighborhoods in Seattle, Washington. Structural equation modeling techniques were used to examine the fit of the model to the data. Although all but one path coefficient were significant and in the expected direction, the model did not fit the data as well as expected (CFI = .87). The researchers next specified second-order factors for each path to capture the substantial common variance in the constructs' opportunities, involvement, and rewards. This model fit the data well (CFI = .90). The researchers conclude that the social development model provides an acceptable fit to predict drug use at ages 17 to 18. Implications for the temporal nature of key constructs and for prevention are discussed. Catalano, R.F., Kosterman, R., Hawkins, J.D., Newcomb, M.D., and Abbott, R.D. Modeling the Etiology of Adolescent Substance Use: A Test of the Social Development Model. Journal of Drug Issues, 26, pp. 429-455, 1996.

Ethnic Differences in the Psychosocial Antecedents of Needle/Syringe Disinfection

Although injection drug users have responded to the AIDS crisis by reducing their behavioral risks to some degree, the prevalence of needle sharing is still alarmingly high. Also, few injection drug users report disinfecting their needles and syringes on a consistent basis. To identify possible psychosocial leverage points for behavioral change, a longitudinal study was used to apply the AIDS Risk Reduction Model to assess ethnic differences in needle/syringe disinfection by 209 injection drug users. Psychosocial antecedents included perceived risk, peer norms, AIDS knowledge, response efficacy, self-efficacy, and intentions to disinfect needles. Outcome was disinfection attempts at follow-up. Among Whites, high perceived self-efficacy for risk reduction had a positive effect on subsequent disinfection attempts. Among African Americans and Mexican Americans, peer norms favorable to risk reduction had a positive effect on subsequent disinfection attempts, while self-efficacy had no effect. Results suggest that risk-reduction capabilities may be rooted in "individualistic" perceptions of the self among white drug users, while "collective self" perceptions may have more impact in specific ethnic groups. The results demonstrated the utility and importance of comparing models of behavior change across ethnic groups. Longshore, D., Stein, J.A., Anglin, M.D. Ethnic Differences in the Psychosocial Antecedents of Needle/Syringe Disinfection. Drug and Alcohol Dependence, 42, pp. 183-196, 1996.

Needle-Sharing: A Longitudinal Study of Psychosocial Risk and Protective Factors

The authors examined the psychosocial correlates of needle-sharing behavior at two points in time by use of a prospective longitudinal design. Subjects were 278 male intravenous drug users, 111 of whom were HIV-positive. All subjects were given structured questionnaires by trained, ethnically matched interviewers. Pearson correlation coefficients (rs) and hierarchical regression analysis were done to examine interrelationships among time 1 (T1) psychosocial domains, T1 needle-sharing, and time 2 (T2) needle-sharing. T1 psychosocial/personality factors predicting T2 needle-sharing included unconventionality, poor emotional control, and poor intrapsychic functioning. The relationship of T1 needle-sharing to T2 needle-sharing was buffered by the T1 psychosocial protective factors. The findings supported a mediational model, in which personality and peer factors predicted T1 needle-sharing, which served as the mediator for T2 needle-sharing. These findings have important implications for intervention. Thus, an intervention earlier in the sequence might focus on the personality and friendship networks at T1, whereas an intervention a little later in the developmental sequence would focus on altering T1 needle-sharing behavior. Earlier therapeutic interventions focusing on personality disposition, family alienation, or peer group affiliations should reduce the risk of later needle-sharing behavior. Brook, D.W., Brook, J.S., Whiteman, M., Wynn, P.S., Masci, J.R., Roberto, J., de Catalogne, J., Amundsen, F. Needle-Sharing: A Longitudinal Study of Psychosocial Risk and Protective Factors. The American Journal on Addictions, 5(3), pp. 209 219, 1996.

Eating Pathology among Women with Alcoholism and/or Anxiety Disorders

Two hundred one non-treatment seeking women with alcoholism, anxiety disorders, alcoholism and anxiety disorders, or neither alcoholism nor anxiety disorders were interviewed to assess core psychopathology associated with eating disorders using the Eating Disorders Examination and DSM-IIIR psychiatric diagnosis. Alcoholic women had significantly higher mean scores on each of the Eating Disorders Examination subscales of Restraint, Overeating, Eating Concern, Shape Concern, and Weight Concern compared with nonalcoholic women. Women with anxiety disorders had significantly elevated scores on subscales of Overeating, Eating Concern, and Weight Concern compared with women without anxiety disorder. Women with both alcoholism and anxiety disorders had higher rates of bulimia nervosa and/or eating disorder NOS compared with women with either disorder alone. Implications of these findings are discussed in the context of the co-morbid association between alcoholism, eating disorders, and anxiety disorders. Sinha, R., Robinson, J., Merikangas, K., Wilson, G. T., Rodin, J., O'Malley, S. Alcohol Clin Exp Res., 20(7), pp. 1184-1191, 1996.

Comorbidity of Alcoholism and Anxiety Disorders

People with alcoholism frequently also suffer from an anxiety disorder. The mechanisms underlying this comorbidity remain unclear. Clinical findings indicate that anxiety disorders may lead to the development of alcoholism. Conversely, alcoholism may contribute to the development of anxiety symptoms. Family studies have reported elevated rates of anxiety disorders in the relatives of patients with alcoholism and vice versa, suggesting that both disorders may share some susceptibility factors. The Yale Family Study of the comorbidity of alcoholism and anxiety confirmed these observations. The study also found gender-specific differences in the risk for some comorbid anxiety disorders. Moreover, the relatives of people with alcohol dependence or anxiety were at increased risk for alcohol dependence but not alcohol abuse. Merikangas, K.R., Stevens, D., Fenton, B. Alcoholism and Anxiety Disorders, 20(2), pp. 100-106, 1996.

Discriminating Depression and Anxiety in Youth: A Role for Diagnostic Criteria

To test the hypothesis that anxiety and depression in youth, as in adults, become increasingly discriminable when youth meet criteria for an emotional disorder, the study uses cross-sectional data at two points in time from a large (n=776) community sample of youths, aged eight to twenty. Associations between major depression disorders (overanxious, obsessive compulsive and separation anxiety disorders, and social and simple phobias) are examined by symptom scale and diagnosis. Anxiety and depression are moderately correlated, and substantially comorbid by diagnostic category. Symptoms are more discriminable among youth who meet criteria for a specific emotional disorder but more highly associated among youths without such a diagnosis. This suggests that in youth, as has been shown in adults, depression and anxiety become increasingly discriminable as emotional psychopathology becomes more severe. Gurley, D., Cohen, P., Pine, D.S., and Brook, J.S. Journal of Affective Disorders, 39, pp. 191-200, 1996.

Reexamining Gender Differences in Circumstances Surrounding Initiation and Escalation of Binge Drinking

Hypotheses regarding gender differences in circumstances surrounding the initiation/escalation of binge drinking were tested. It was hypothesized in this study that due to socialization in accordance with gender-specific norms, males will use/abuse alcohol out of a need to enhance their sense of potency or self-importance. In contrast, females were hypothesized to be more likely to resort to alcohol for personal and intrapsychic purposes. The data used for this analysis were derived from a household interview of a sample of young adults who were initially studied in 1971 (Time 1). A follow-up study of these people in the 1980's (Time 2), resulted in a successful interview of 6,074 subjects. Of these, 1,129 subjects reported to have engaged in binge drinking sometime in their life. Listwise deletion of missing values produced a final N=1,101. The circumstances that surround initiation and escalation of binge drinking were measured by six scales. In general the multiple regression analyses suggested a congruence between observed gender differences in circumstances surrounding initiation and escalation. Some additional observed differential effects of gender included, level of drinking (light or heavy) and peer influence at the initial level of drinking, but not escalating it. For escalation of binge drinking, no gender-related effect on peer influence was observed. However, all other gender-related effects continued to be observed at even greater levels. The results also supported the conclusion that the gender related effects are at least partially independent, although certain of the effects were attenuated when other circumstances (scales) were included in the model. Liu, X., and Kaplan, H.B. Reexamining Gender Differences in Circumstances Surrounding Initiation and Escalation of Binge Drinking. International Journal of Sociology and Social Policy, 16(5/6), pp. 26-51, 1996.

Stigma, Deviance, and Social Sanctions

This study tests the hypothesis that deviant acts are more likely to evoke negative social sanctions if the person already is stigmatized. The underlying assumption is that possessing a physical stigma defines the individual as the occupant of a deviant master status. The subjects selected for this analysis were drawn from seventh grade respondents in the Houston Independent School District in the fourth wave of data collection in an on going panel study. The initial size of the data set was 6,074. Deleting cases that did not have any reports of committing one or more of the specified deviant acts produced a final N=4,065. Multivariate logistic regression models were estimated with the following control variables: frequency and intensity of deviant acts, tendency to perceive rejection, gender, minority status, and level of education. Partial support was obtained for the hypothesis that individuals who have committed a deviant act will be more likely to invite negative social sanctions if they have a stigma than if they do not have a stigma. Stigma was found to significantly predict reports of having a close call with the police or getting arrested because of a deviant act. Stigma was not a statistically significant predictor for experiencing rejection by a boy/girlfriend, parents, friends, or others who were important to them as a result of committing a deviant act. Additionally, stigma was not found to be a statistically significant predictor for serving time in jail or prison because of the commission of a deviant act. In general, these results suggest the synergistic influence of prior deviant master statuses and other deviant responses on evoking negative social sanctions. Stiles, B.L., and Kaplan, H.B. Stigma, Deviance, and Negative Social Sanctions. Social Science Quarterly, 77(3), pp. 685-696, 1996.

Drug Abuse and Crime are Nurtured in Children Who Live in Crack-Abusing Households

A case study was conducted of child-rearing practices in one large, highly criminal and drug-abusing household/kin network in New York City. This case study delineated the concrete expectations and actual practices -- called conduct norms -- with which the household adults respond to or "nurture" their children. Adults in crack-abusing households typically model deviant activities and rarely engage in conventional behaviors. They rarely take measures to protect their children from harm but are often the ones who inflict the greatest harm. The conduct norms in these deviant

households are well designed to nurture anti-social children who later become juvenile delinquents and adult criminals, drug abusers, and prostitutes. Johnson, B., Dunlap, E., and Maher, L. Nurturing for Careers in Drug Abuse and Crime: Conduct Norms for Children and Juveniles in Crack-Abusing Households. Substance Use and Abuse, In press.

Factors Mediating Effects of Parental Support on Adolescents' Substance Use

Researchers at the Albert Einstein College of Medicine examined factors mediating the effects of parental emotional and instrumental support on adolescents' use of tobacco, alcohol, and marijuana. Data were obtained from a sample of 1,702 adolescents surveyed beginning in the 7th grade and continuing in the 8th and 9th grades. At each assessment, parental support was found to be inversely related to substance use, and stress-buffering interactions were observed throughout. Structural modeling analyses indicated the effect of parental support was mediated through multiple pathways. In general, however, the major mediators were higher levels of behavioral coping and academic competence and less tolerance for deviance and behavioral undercontrol; these mediators were related to negative life events and deviant peer affiliations. Multiple-group analyses suggested buffering effects occurred because high support reduced the effect of risk factors and increased the effect of protective factors. Results of this study support the position that enhanced coping ability is an important mechanism through which social support contributes to adjustment. Wills, T.A., and Cleary, S.D. How Are Social Support Effects Mediated? A Test with Parental Support and Adolescent Substance Use. Journal of Personality and Social Psychology (5), pp. 937-952, 1996.

Juvenile Drug Traffickers: Characterization and Substance Use Patterns

Drug trafficking has become one of the dominant issues facing the criminal justice system. Juveniles involved in drug trafficking have been reported to be far more likely to be seriously immersed in substance abuse and delinquent behavior than nonsellers. The primary aim of the present study was to examine the substance use patterns of juveniles incarcerated for drug trafficking offenses in the Commonwealth of Virginia (N=240). A second goal of the study was to characterize juvenile drug traffickers based upon additional information pertaining to their delinquent, social, psychological, educational and medical histories. For this purpose a demographic comparison group was generated (N=433). The results indicated that the most frequently sold substance was cocaine (93%), either powdered or crack, while alcohol and marijuana were the drugs most often used by the juvenile drug traffickers. The juvenile drug traffickers were associated with lower levels of aggressivity, violence and delinquency when compared to other incarcerated juveniles from their community. In addition, the juvenile drug traffickers were characterized by higher ratings in several areas which included social and psychological functioning. Areas that did not correlate well with drug trafficking were physical health, intellectual functioning and academic achievement. The results of this study indicated that juvenile drug traffickers tend not to use the drugs that they sell, and generally present as higher functioning and better adjusted in almost every area evaluated, when compared to their incarcerated delinquent peers. McLaughlin, C.R., Smith, B.W., Reiner, S.M., Waite, D.E., and Glover, A.W. Juvenile Drug Traffickers: Characterization and Substance Use Patterns. Free Inquiry in Creative Sociology, 24(1), p. 3, 1996.

Risk and Protective Factors for Drug Use: Etiological Considerations

This conceptual chapter reviewed the literature in the field of the psychosocial etiological contributions to adolescent drug use and abuse. It outlined the domains of risk and protective factors which contribute to or lessen the risk of drug use. The cultural/societal domain includes adverse economic conditions, neighborhood disorganization, and noxious physical and social environments, as well as ethnicity and acculturation and the influence of the media. The family domains comprise the parental marital relationship domain, the parental drug use and personality domains, the parent-adolescent relationship domain (including parental control variables) and the sibling domain. The childhood and adolescent personality domains focus on aspects of unconventionality, emotional control, personal functioning, and social relatedness. Unconventionality, emphasizing sensation seeking, rebelliousness, tolerance of deviance, and low school achievement, is an especially potent predictor of later drug use. Genetic and physiological factors act as predisposing elements on which the environmental and psychosocial forces act to produce the phenotype of drug use/abuse. This is know as the "risk-diathesis hypothesis." A mutually affectionate parent-adolescent relationship is strongly protective against the risk factors for drug use. The presence of protective factors can ameliorate the adverse effects of risk factors, reducing vulnerability and enhancing resilience. Alcohol and drug use are stable behaviors over time, although adolescents tend to progress through stages of use, from legal to illicit drugs. Almost all drug use begins before the age of 21, and tends to be related to other deviant behavior. Substance abuse and psychopathology seem linked, as comorbidity is increasingly recognized, and the link between drug use and crime is also fairly well-established. Although drug use may continue well into adulthood, generally drug use lessens with the increasing assumption of adult social roles. Principles of prevention intervention include: (1) an early

start, (2) education for parenting; (3) the provision of adequate social and economic resources; (4) adequate health care; (5) enhancing educational goals; (6) using a multi-disciplinary approach to enhance protective factors and decrease risk factors. Brook, J.S., and Brook, D.W. Risk and Protective Factors for Drug Use: Etiological Considerations. In: C.B. McCoy, L.R. Metsch, J.A. Inciardi (Eds.), Intervening with Drug Involved Youth, pp. 23-44, 1996. Thousand Oaks, CA: Sage Publications.

Deviancy Training in Male Adolescent Friendships

The conversations of 186 adolescent boys ages 13-14 and their friends were videotaped and analyzed to understand the processes of influence associated with antisocial behavior. Sequential analyses revealed a statistically reliable reciprocal pattern between Rule-Breaking talk and Laugh in the delinquent (both boys arrested) dyads, whereas in the mixed (one arrested) and nondelinquent (neither arrested) dyads, reciprocation occurred between Normative talk and Laugh. Longitudinal analyses of the boys' behavior over 2 years revealed that the deviancy training sequence was prognostic of increases in self-reported delinquent behavior. The data have implications for intervention strategies and policies involving antisocial youth. One implication is that interventions should avoid aggregating high-risk youths in homogeneous groups. Dishion, T.J., Spracklen, K.M., Andrews, D.W., and Patterson, G.R. Deviancy Training in Male Adolescent Friendships. Behavior Therapy, 27, pp. 373-390, 1996.

Environmental Manipulation Alters Drug Efficacy

To further test the impact of different rearing environments on subsequent behavioral and neurologic response to morphine, rats were raised from weaning to young adulthood in either an enriched-EC (group housed with various novel visual objects) or impoverished-IC (housed individually with no objects). As adults, locomotor activity and reward produced by morphine was assessed using the conditioned place preference paradigm (CPP). On Day 1, rats in both groups showed an inverted U-shaped dose effect curve for locomotor activity though the effect was greater for IC than the EC group. Across days, both groups showed locomotor sensitization; although again, the effect was greatest in the IC group. However, in contrast, morphine-induced CPP (the measure of 'reward') was attenuated in the IC group when compared to the EC group indicating that the locomotor versus rewarding effects were dependent on different neural substrates. Measurement of mu opioid receptor density and rates of dopaminergic synthesis in the mesolimbic and nigrostriatal systems of rats from each group showed no difference between IC or EC groups. Therefore, it was concluded that while these receptors do modulate mesolimbic dopamine neurotransmission this does not account for the differential behavioral effects seen in the IC group relative to the EC group. Bardo, M.T., Robiner, P.M., and Hammerd, R.F. Effect of Differential Rearing Conditions of Morphine-Induced Behaviors, Opioid Receptors and Dopamine Synthesis. Neuropharmacology, In press.

The Impact of a Localized Antidrug Media Campaign Associated with Adolescent Drug Use

The purpose of the study was to determine whether local antidrug campaigns can affect variables associated with adolescent drug use. An experiment was conducted with sets of matched communities with populations between 5,000 and 30,000 distributed throughout the United States. Seven through twelfth grade students in the experimental communities were exposed to a year long media campaign. On a follow-up survey, recall of the media campaign was low. Adolescents with low and moderate levels of drug use who recalled individual campaign flights showed beneficial effects on targeted variables in comparison with students who did not recall the campaigns and control students who were not exposed to the campaign. The authors suggest comparing a media campaign alone with that of a media campaign combined with interpersonal or school-based curriculums. Kelly, K.J., Swaim, R.C. and Wayman, J.C. The Impact of a Localized Antidrug Media Campaign on Targeted Variables Associated with Adolescent Drug Use. Journal of Public Policy and Marketing, 15(2), pp. 238-251, 1996.

Is Current Drug Abuse Prevention Programming Generalizable Across Ethnic Groups?

Considerable progress has been made over the past two decades in identifying effective drug abuse prevention strategies. In particular, much support has been obtained for the effectiveness of a comprehensive social influences approach to drug abuse prevention. Given the inclusion of fundamental social psychological principles in comprehensive programs, it is possible that currently developed drug abuse prevention programming is generalizable to different ethnic groups. However, the empirical and theoretical evidence is equivocal regarding the extent to which this is true. In this article, the authors present arguments for (lack of supply or inadequate access, lack of demand, differences in acquisition variables, and inappropriate timing) and against (successful program show results across groups, interactive programs incorporate group differences, similar initiation patterns across groups, and societal and programmatic costs) the need to develop drug abuse prevention programs specifically for minority ethnic groups.

Dent, C.W., Sussman,S., Ellickson, P., Brown, P., and Richardson, J. Is Current Drug Abuse Prevention Programming Generalizable Across Ethnic Groups? American Behavioral Scientist, 39(7), pp. 911-918, June 1996.

The Timing and Severity of Antisocial Behavior: Three Hypotheses Within an Ecological Framework

The goal of this chapter is to render an environmental explanation for the timing and severity of child and adolescent antisocial behavior. Three basic hypotheses are discussed: (1) The social interactional hypothesis; (2) the marginal deviation hypothesis; and (3) the contextual sensitivity hypothesis. Three features of a toxic social context are defined: poverty, stigmatization and isolation, and deviant norms. The authors have found that the impact of context on child adjustment is mediated through parenting practices. The ecological framework is used to explain the developmental patterns of childhood and adolescent-onset antisocial behavior. The authors suggest a view of prevention and intervention that emphasizes harm reduction and moves away from the disease model conceptualizations of antisocial behavior. Dishion, T.J., and Patterson, G.R. The Timing and Severity of Antisocial Behavior: Three Hypotheses Within an Ecological Framework. In Stoff, D., Breiling, J., and Maser, J. (Eds), Handbook of Antisocial Behavior. New York: John Wiley & Sons, 1996.

Implicit Cognition in Adolescent Drug Use

Implicit cognitive responses to drug-use cues and drug outcomes, assessed with measures of memory association, were studied in a sample of high risk, White and Latino adolescents. The utility of these responses as predictors of drug use was examined and compared with potentially confounding predictors, including gender, socioeconomic status, ethnicity, and acculturation. The background variables also served as potential moderators of the effects of implicit cognition. The results revealed that measures of memory association were consistent, direct-effect predictors of marijuana and alcohol use. In addition, these implicit cognitive measures were stronger predictors than were the background variables, and their predictive effects were not moderated by other variables. The results provide further support for the implicit cognition perspective in drug use. Stacy, A.W., Ames, S., Sussman, S.Y., and Dent, C.W. Implicit Cognition in Adolescent Drug Use. Psychology of Addictive Behaviors, 10, pp. 190-203, 1996.

Children's Conceptions of AIDS and Related Risky Behavior

This is a seven year longitudinal study of children's understanding of AIDS and beliefs, attitudes, norms, intentions and behaviors regarding cigarette, alcohol and drug use, and sexual intercourse and condom use. The longitudinal sample of 1,173 students was first surveyed in 1992 when they were in grades 3, 4, 5, and 6. Fifty one percent of the sample are girls, 47% are white, 24% African American, 20% Asian American, and 9% of other ethic backgrounds. The most recent publication examines the applicability of Fishbein and Ajzen's (1975) Theory of Reasoned Action to intentions to use cigarettes and alcohol among 5th- and 6th- grade students. The researchers examined the relationships among beliefs, norms, attitudes and intentions to smoke and drink in these students who were in 5th and 6th grade at the Time 1 (1992) survey, and examined the relationship of Time 1 intentions to self-reported behavior at Time 2 (1993). Beliefs and norms about these behaviors were multidimensional. Analyses revealed the following dimensions: For drinking; positive outcomes (e.g., feeling happy); negative outcomes (e.g., feeling sick), parents norm; and friends norm. For smoking; positive outcomes, (e.g., feel more grown up); immediate negative outcomes (e.g., yellow teeth), long term negative outcomes (e.g., hurt your lungs); parents norms; and friends norm. The Theory of Reasoned Action describes these children's decision-making well. Children with attitudes and norms more favorable to smoking or drinking were more likely to intend to drink, and intentions to smoke and drink were positively related to smoking or drinking in the next year. Morrison, D.D., Simpson, E.E., Gillmore, M.R., Wells, E.A., and Hoppe, M.J. Children's Decisions About Substance Use: An Application and Extension of the Theory of Reasoned Action. Journal of Applied Social Psychology, 26(18), pp. 1658-1679, 1996.

Novelty Seeking in Animals Further Linked to Brain Reward Centers

To further evaluate brain function and the role of specific centers on drug use, voltammetric recordings were obtained from specific regions of the forebrain in rats during operant maneuvering given free choice access to a novel environment. Entry into novelty increased the catechol signal in the medial prefrontal cortex and shell of nucleus acumbens by more than 100% when compared to baseline activity and this increase was only detected during initial entry into the novel compartment and did not reoccur upon reentry to the familiar environment. No consistent effect in either neostriatum or the acumbal core was recorded. These results support increasing evidence for a functional distinction between the acumbal core and shell with the latter having been linked to brain reward mechanisms. The results also indicate that novelty activates some of the neurochemical systems that appear to play a critical role in the reinforcing effects of certain drugs of abuse. Rebec, G.V, Grabner, C.P., Johnson, M, Pierce, R.C., and Bardo, M.T.

Transient Increases in Catecholamine Activity in Medial Cortex and Nucleus Acumbens Shell During Novelty. Neuroscience, In press.

Drug Rehabilitation in China

The Yunnan Province in China may be experiencing the highest incidence of heroin use in China, in part because of its proximity to the Golden Triangle. This high incidence, as elsewhere, threatens to increase associated problems in China, including the spread of HIV. Moreover, the high purity of heroin used in this Province leads to rapid addiction and increased difficulties in treating the symptoms of withdrawal. One response to this epidemic is described in this article, namely, the development and implementation of the Kunmung Drug Rehabilitation Center. The Center, with a capacity for 620 addicts, is grounded in a recovery-oriented perspective based on the Therapeutic Community Model and modified for the Yunnan Province of China. It is referred to as the Kunmung Model and is known for its own medicine for detoxification and its individualized psychological, psychiatric, medical, and biosocial program. Similarities and differences between the Kunmung Center and treatment programs in the U.S. are discussed and implications for universal approaches to drug treatment are addressed. McCoy, C., Lai, S., Metsch, L. et al. No Pain No Gain, Establishing the Kunmung, China, Drug Rehabilitation Center. Journal of Drug Issues, 27(1), pp. 73-85, 1997.

Psychometric Evaluation of a Health Risk and Anabolic Steroid Questionnaire

Psychometric properties of a questionnaire designed to assess health risk and anabolic steroid use/intent to use in a population of high school football players were evaluated. The questionnaire was created with the competing goals of producing reliable and valid constructs while keeping the length short enough to enable accurate and complete responding. Internal consistency and test retest reliability as well as content, criterion-related and construct validity were assessed. Overall, the questionnaire produced reliable and valid outcome constructs, including intent to use steroids, nutrition behaviors and strength training self-efficacy, and constructs examining peer and nonpeer influence, as well as individual characteristics. These constructs should prove useful in future studies of anabolic steroid use and health behaviors. McKinnon, D.P., Goldberg, L., Lapin, A., Clarke, G.N., Elliott, D.L., and Moe, E. Psychometric Properties of an Adolescent Health Risk and Anabolic Steroid Questionnaire: The Adolescent Training and Learning to Avoid Steroids (ATLAS) Project. Health Education Research, In press.

Modeling Growth and Change Processes: Design, Measurement, and Analysis for Research in Social Psychology

This chapter discusses design, measurement, and analysis issues relevant to the study of growth and change in social psychological research. Individual growth is taken as a starting point by arguing that the assessment of individual growth is a necessary prerequisite to the assessment of interindividual or group differences in growth. Discussed are the age, cohort, and time perspective and its implications for research design. Other design issues are considered including missing data and subject attrition, and measurement effects. Results demonstrate that the timing of data collection is an important and often neglected design consideration. Some new aspects of measurement validity relevant to measurement of change are discussed. The shortcomings of traditional measurement procedures when applied to the measurement of change were reviewed, and a measurement model that incorporates a model of change is presented. Finally, two frameworks for the statistical analysis of change are discussed. Collins, L.M. and Sayer, A.G. Growth and Change in Social Psychology Research: Design, Measurement, and Analysis. In H. Reis and C. Judd (Eds.), Handbook of Research in Social Psychology. Cambridge: Cambridge University Press. In press.

Intrapersonal Contributors to Drug Use: The Willing Host

Although social environmental factors play a large role in the development of substance use and abuse, other important contributors reside within the individual. These intrapersonal factors help determine certain aspects of the social environment, which may in turn alter the probability of drug use and abuse. In addition, these intrapersonal factors alter chances of initiation, the transition from initiation to regular use of a drug, and the transition from regular drug use to problem use. These factors include (but are not limited to) personality, cognition, affect, problem behaviors, biogenetics, demographics, and bonding. The authors explore the potential role of each of these intrapersonal factors in a larger, biopsychosocial model of drug use and abuse. The authors also discuss the implications of each of these factors for prevention. Newcomb, M.D. and Earleywine, M. Intrapersonal Contributors to Drug Use: The Willing Host. American Behavioral Scientist, 39, pp. 823-837, 1996.

Employee Attitude Crystallization and Substance Use Policy: Test of a Classification Scheme

Previous research suggests that employees are often unaware of or ambivalent toward substance abuse policies. These studies focus on one policy component-drug testing-and fail to distinguish employees with clear (or crystallized) from unclear attitudes. The current study explored a broader view of policy and examined both personal and situational factors that may determine attitudes. Survey data from employees in three municipalities support a distinction among five attitude categories; those who are: (a) dissatisfied with efforts to control employee abuse, (b) satisfied, (c) anti-policy, (d) pro-policy, and (e) uninformed. Discriminant analyses suggest that different profiles characterize these attitude groups. For example, dissatisfied employees report low personal alcohol use, high co-worker alcohol use, and low self-referral whereas anti-policy employees report high personal drug use, high co-worker use, and low job identity. Discussion focuses on policy as a social construction and the implications of attitude distinctions for employee training. Bennett, J.B., and Lehman, W.E.K. Journal of Drug Issues, 26(4), pp. 831-864, 1996.

[Home Page][Office of the Director][Report Index][Previous Report Section] [Next Report Section]

Archive Home | Accessibility | Privacy | FOIA (NIH) | Current NIDA Home Page

National Institute on Drug Abuse

Director's Report to the National Advisory Council on Drug Abuse

May, 1997

Research Findings

Intramural Research

Adrenalectomy Modifies Nicotine-Induced Dopamine Release and Locomotor Activity in Rats

Removal of adrenal glands can significantly modify sensitivity to both the behavioral and neurochemical effects of nicotine. The locomotor depressant effects of high doses of nicotine show potentiation and the locomotor activating and dopamine-releasing properties elicited by low doses of nicotine attenuate after adrenalectomy. This suggests that these two effects of nicotine may be mediated via similar neural substrates. In view of the modulatory role of corticosteroids, these hormones warrant further investigation as their manipulation may have therapeutic utility in the treatment of certain tobacco addictions. Shoaib, M., Shippenberg, T.S., Adrenalectomy Attenuates Nicotine-Induced Dopamine Release and Locomotor Activity in Rats. Psychopharmacology. 128, pp. 3443-350, 1996.

The Opiate Peptide DADLE Enhances Recovery of Myocardial Function in Preserved Hearts

To assess the clinical practicality of using DADLE, an opiate peptide, as a potential organ preservation agent, we examined if DADLE might prolong the survival of a single organ. Isolated rabbit hearts were monitored for baseline functions in a Langendorff apparatus before being subjected to 18 hrs of hypothermic global ischemic storage. Standard cardioplegia (CP), currently used in cardiac transplantation, restored myocardial function to only 20-30% of the preischemic values. Preperfusion of the heart with DADLE for 15 min before standard CP treatment produced a 60-80% recovery of myocardial function compared to the preischemic values. DADLE may, thus, be an important, useful agent for myocardial preservation and cardiac transplantation. Bolling, S.F., Su, T-P., Childs, K.F., Ning, X-H., Horton, N., Kilgore, K., and Oeltgen, P.R.. The Use of Hibernation Induction Triggers for Cardiac Transplant Preservation. Transplantation, 63, pp. 326-329, 1997.

Methamphetamine Induces Apoptosis in Immortalized Neural Cells: Protection by the Protoncogene, bcl2

Methamphetamine (METH) is an amphetamine analog that produces degeneration of the dopaminergic systems in mammals. The neurotoxic effects of drug are thought to be mediated by oxygen-based free radicals. In the present report, we have used immortalized neural cells obtained from rat mesencephalon in order to further assess the role of oxidative stress in METH-induced neurotoxicity. These findings may be of relevance to the cause(s) of Parkinson's disease which involves degeneration of the nigrostriatal dopaminergic pathway. Cadet, J.L., Ordonez S.V., and Ordonez J.V. Methamphetamine Induces Apoptosis in Immortalized Neural Cells: Protection by the Protoncogene, bcl2. Synapse, 25, 1997.

Phentermine Pretreatment Antagonizes the Cocaine-induced Rise in Mesolimbic Dopamine

Coadministration of phentermine and fenfluramine has been used to treat cocaine dependence. Patients who relapse

while receiving this treatment report diminished subjective effects of cocaine. Due to the importance of mesolimbic dopamine (DA) in mediating cocaine reinforcement, it was hypothesized that phentermine might attenuate the effects of cocaine on DA transmission. Researchers examined this proposal directly using in vivo microdialysis methods in the nucleus accumbens of awake rats. Rats were pretreated with saline or phentermine (1 mg/kg, iv) and then challenged with cocaine (3 mg/kg, iv). Phentermine alone caused a modest increase in DA, and phentermine pretreatment substantially reduced the cocaine-induced rise in extracellular DA. Alternately, phentermine did not alter the stimulatory effect of cocaine on 5-HT. Findings from this research suggest that phentermine may antagonize the subjective effects of cocaine in humans via a DA mechanism. Rothman, R.B., Ayestas, M., and Baumann, M.H. Phentermine Pretreatment Antagonizes the Cocaine-induced Rise in Mesolimbic Dopamine. Neuroreport 9: pp. 7-9, 1997.

Decrease in Cocaine-Maintained Responding in Rhesus Monkeys with 1-[2-[bis-(4-fluorophenyl)methoxy]ethyl]-4-[3-hydroxy-3-phenylpropyl] Piperazinyl Decanoate

The selective DA reuptake inhibitor GBR 12909 previously has been shown to decrease cocaine-maintained responding without affecting similar levels of food-maintained responding in monkeys, an effect analogous to that expected of a medication designed to treat human cocaine abuse without adverse effect. In the current study, investigators extended this type of effect by developing a decanoate ester of a hydroxylated analog of GBR 12909 (compound 5). Within several days of the administration of an active dose of 5, cocaine-maintained responding had decreased more than 80% while food-maintained responding was unaffected. This selective effect on cocaine-maintained responding lasted almost thirty days with a single injection, and was followed by a return to control levels of responding. These results suggest that a similar formulation, if proven safe for human use, should be tested as a potential medication for cocaine abuse. Sustained Decrease in Cocaine-Maintained Responding in Rhesus Monkeys with 1-[2-[bis-(4-fluorophenyl)methoxy] ethyl]-4-[3-hydroxy-3-phenylpropyl] Piperazinyl Decanoate, a Long-Acting Ester Derivative of GBR 12909. Glowa, J.R., W.E. Fantegrossi, D.B. Lewis, D.M. Matecka, K.C. Rice, and R.B. Rothman. J. Med. Chem. 39(24), pp. 4689-4691, 1996.

Phentermine/Fenfluramine Decreases Cocaine Self-Administration in Rhesus Monkeys

Dopamine reuptake inhibitors can decrease cocaine self-administration at doses that do not decrease food-maintained responding. To assess whether similar effects could be obtained with medications currently considered for substance abuse, fenfluramine/phentermine combinations were given to rhesus monkeys responding under multiple fixed-ratio 30 schedules of food- and cocaine-delivery. Phentermine decreased cocaine-maintained responding while having less of an effect on food-maintained responding. Although fenfluramine did not selectively affect cocaine-maintained behavior, combining a low dose of fenfluramine with phentermine slightly enhanced the selectively of effect of phentermine on these behaviors. These results provide further data supporting the possible efficacy of phentermine/fenfluramine as a pharmacological treatment for cocaine addiction. Phentermine/Fenfluramine Decreases Cocaine Self-Administration in Rhesus Monkeys. Glowa, J.R., K.C. Rice, D. Matecka, and R.B. Rothman. NeuroReport, In press.

Effect of Dopamine Receptor Antagonists on Cocaine Subjective Effects

Schizophrenic patients on neuroleptic medications abuse cocaine and report cocaine-induced euphoria. This study was undertaken to provide better clinical characterization of these phenomena by administering the POMS and a custom designed questionnaire. A group of heavy cocaine users who were not mentally ill served as the control group. The results clearly suggest that schizophrenic patients report cocaine-induced euphoria and post-use craving despite being treated with therapeutic doses of haloperidol or fluphenazine. The responses of the control group were similar to that of the schizophrenic group except that the latter subjects reported a greater degree of anxiety. These results suggest that blockade of D2 receptors is not sufficient to block cocaine-induced subjective effects in humans. Effect of Dopamine Receptor Antagonists on Cocaine Subjective Effects: A Naturalistic Case Study. Ohuoha, D.C., J.A. Maxwell, L.E. Thomson, J.L. Cadet, and R.B. Rothman. J. Subst. Abuse Treat., In press.

Opioid Peptide Receptor Studies

Mutational analysis of opioid receptors indicates that dissimilar receptor domains contribute to the binding affinity and pharmacological effects of different ligands. The availability of four stereoisomers of (±)-cis-N-[1-(2-hydroxy-2-phenylethyl) 3-methyl-4-piperidyl]-N- phenylpropanamide (RTI-4614-4) allowed us to determine if enantiomeric ligands can distinguish among the four parameters of the ligand-receptor interaction: potency (ED50), efficacy (maximal stimulation), intrinsic efficacy (effect as a function of receptor occupation) and binding affinity, since the

use of ligand stereoisomers focuses the analysis on asymmetric structural factors while avoiding confounding changes in physiochemical characteristics. The data, obtained with cloned rat receptors, demonstrate that the four isomers of RTI-4614-4 differ in binding affinity, potency, efficacy and intrinsic efficacy. We speculate that this results from binding to different domains of the opioid receptor. Opioid Peptide Receptor Studies. 6. The 3-methylfentanyl Congeners RTI-4614-4 and its Enantiomers Differ in Efficacy, Potency and Intrinsic Efficacy as Measured by Stimulation of [35S]GTP-g-S Binding by Cloned Mu Opioid Receptors. Xu, H., Y.F. Lu, J.S. Partilla, G.A. Brine, F.I. Carroll, K.C. Rice, J. Lai, F. Porrca, and R.B. Rothman. Analgesia, In press.

Doses of GBR12909 Which Suppress Cocaine Self-Administration in Nonhuman Primates Substantially Occupy Dopamine Transporters

GBR12909 (GBR) is a high affinity, selective and long-acting inhibitor of DA uptake which has been proposed as a potential treatment agent. GBR produces a persistent and noncompetitive blockade of DA transporters and substantially reduces cocaine-induced increases in extracellular DA. Slow iv infusion of GBR to Rhesus monkeys selectively reduced (1 mg/kg) and eliminated (3 mg/kg) cocaine self-administration. This study tested the hypothesis that doses of GBR which reduce cocaine self-administration in nonhuman primates produce significant occupation of DA transporters. DA transporters were quantitated in two baboons using [11C]WIN35,428 and PET. The baboons underwent four PET scans (performed on two separate study days, 3-4 weeks apart). Blood pressure, temperature, heart rate and oxygen saturation were monitored throughout each study. On the first scan of the first study day the baboon received saline (3 ml/kg) 90 min before the injection of the radiotracer. GBR (1 mg/kg i.v.) was infused 90 min before the second [11C]WIN 35,428 study. The second study (3-4 weeks from the first study day) was conducted identically to the first study, except that the dose of GBR was 3 mg/kg. Doses of 1 (n=1) and 3 mg/kg (n=2) produced % reductions of binding potential of 18 and 53%, respectively. GBR was well tolerated in all baboons. One baboon showed transient bradycardia (that lasted less than 5 min) immediately after the injection of 1 mg of GBR. No changes in blood pressure or oxygen saturation were observed in any of the baboons. These results demonstrate that doses of GBR which suppress cocaine self-administration in nonhuman primates also produce high occupancy of the DA transporter. Viewed collectively with other work, these data strongly suggest that occupancy for the DA transporter by GBR explains its ability to attenuate cocaine-induced increases in extracellular DA and to suppress cocaine self-administration. Moreover, these data suggest that clinical trials (planned) of orally administered GBR should use doses which produce at least 50% occupancy of the DA transporter. Doses of GBR12909 Which Suppress Cocaine Self-Administration in Nonhuman Primates Substantially Occupy Dopamine Transporters. Villemagne, V., Wong, D.F., Yokoi, F., Rice, K.C., Matecka, D. and Rothman, R.B.

An Open-Label Study of a Functional Opioid Kappa Antagonist in the Treatment of Opioid Dependence

Several lines of evidence, including the well-established observation that kappa opiate agonists produce dysphoria and psychotomimetic effects in humans, suggest that dysfunction of the endogenous kappa opioid system may contribute to opioid and cocaine addiction. The objective of this open-label study was to determine the effectiveness of a functional kappa antagonist as a treatment for opioid dependence. Fifteen treatment-seeking heroin dependent (DSM-IV) men (41±7 yrs old; 19±8 years heroin use) who were eligible for methadone maintenance but did not want it enrolled in the study. After inpatient detoxification at the VA and a naloxone-challenge test to verify that they were not physically dependent on opioids, subjects received naltrexone (50 mg po per day) to block mu opioid receptors. On the fourth day patients received liquid buprenorphine (4 mg sl), a partial mu agonist and a kappa antagonist, in addition to naltrexone. All patients received medication at the clinic six days per week and a full program of psychosocial treatment. Outcome variables included pupillary diameter, urine toxicology, self-reported drug use, the SCL-90, ASI and the Beck Depression Inventory. Five patients (33%) completed the three-month study. Four were abstinent from opioids and cocaine for the entire study, and one was abstinent from opioids and cocaine for the last nine weeks. Six subjects dropped out due to either minor side effects or disliking the sensation of sublingual buprenorphine. Initial analysis of the data shows no changes in pupillary diameter. The positive response to treatment exceeds that ordinarily expected from naltrexone alone (90% drop-out). These promising results suggest that controlled studies of this medication combination should be conducted. An Open-Label Study of a Functional Opioid Kappa Antagonist in the Treatment of Opioid Dependence. Rothman, R.B., Gorelick, D.A., Eichmiller, P.R., Hill, B.H., Norbeck, J., and Liberto, J.G.

Anatomical Distribution of a Novel Kappa2 Opioid Receptor in Guinea Pig Brain

Visualized with [125I]IOXY. Previous studies demonstrated unique opioid receptor distributions in guinea pig brain sections at the level of the caudate putamen. Mu, delta, and kappa1 receptors were depleted by the irreversible ligands BIT, FIT, and UPHIT, and opioid receptors were labeled with the opioid antagonist [125I]IOXY and subjected

to autoradiographic analysis. The objective of this study was to characterize further these unique binding sites (designated kappa2). Kappa2 binding was quantitated by autoradiography in specific regions of four different levels of guinea pig brain (olfactory bulb, caudate putamen, hippocampus, and substantia nigra) for a total of 37 determinations across all levels. The kappa2 distribution was then compared with the binding sites labeled by [125I]DAMGO (mu), [125I]deltorphin II (delta), and [125I]IOXY under kappa1 conditions to identical regions in adjacent guinea pig brain sections. The results are: (1) kappa2 binding greatly exceeded mu and delta binding in all regions; (2) kappa2 binding exceeded kappa1 binding in all regions except the deep cortex at the level of the hippocampus; (3) the kappa2 distribution was different than that of mu, delta or kappa1 receptors. These results provide further evidence for the existence of a novel opioid binding site in guinea pig brain. Anatomical Distribution of a Novel Kappa2 Opioid Receptor in Guinea Pig Brain Visualized with [125I]IOXY. Partilla, J.S., Ni, Q., Rice, K.C., Matecka, D., and Rothman, R.B.

[Home Page][Office of the Director][Report Index][Previous Report Section][Next Report Section]

Archive Home | Accessibility | Privacy | FOIA (NIH) | Current NIDA Home Page

National Institute on Drug Abuse

Director's Report to the National Advisory Council on Drug Abuse

May, 1997

Program Activities

Program Announcements/RFAs

B/START - NIDA: Behavioral Science Track Awards for Rapid Transition

This Program Announcement (PAR-97-046) was released in March, and underscores NIDA's commitment and interest in expanding the scope of behavioral sciences research in drug abuse. NIDA invites newly independent investigators to submit applications for small-scale, exploratory (i.e., pilot) research projects related to NIDA's behavioral sciences mission. B/START- NIDA will provide rapid review and funding decisions of applications. Experimentally-based applications are especially encouraged in cognitive and perceptual processes, social processes and motivational factors in drug abuse. Given the role that drug abuse plays in HIV/AIDS transmission, studies applying behavioral science models and methods to address this issue are especially encouraged. The full announcement can be accessed at gopher://gopher.nih.gov:70/00/res/nih-guide/pa files/PAR-97- 046.

NDA Filed for Buprenorphine as an Opiate Addiction Treatment Medication

An NDA for buprenorphine as an opiate treatment medication was filed with the U.S. Food and Drug Administration on March 26 by Reckitt & Colman Pharmaceuticals, Inc. The submission of the NDA represents the results of a major collaborative effort between NIDA's Medications Development Division (MDD) and Reckitt & Colman. Phase III clinical trials for a combination product of buprenorphine combined with naloxone are underway and should conclude by fall.

Medications Development Research Units Meeting

The quarterly meeting of the Medications Development Research Units (Department of Veterans Affairs Medical Centers who participate as MDD clinical trials sites) was held March 25-26, 1997 in Los Angeles, CA. MDD staff and staff from all MDRU sites held discussions of progress concerning on-going clinical trials and planning and support for planned trials, as well as logistics and infrastructure issues.

Buprenorphine Multi-Center Studies Meeting

NIDA's MDD held an investigator's meeting on the current buprenorphine multi-center studies on April 1-2, 1997 in New Orleans, LA. Recruitment for the trial is on schedule with 50% of the subjects currently randomized into the treatment group. Although the blind has not been broken, retention is excellent and adverse reactions rates are low. A Data Safety Monitoring Board meeting will review the safety data from this study in June.

NIDA/Sanofi Pharmaceuticals CRADA

A CRADA that reflects a collaboration between Sanofi Pharmaceuticals and NIDA's Intramural Research Program has been approved by the CRADA subcommittee and NIDA. This agreement provides the basis for NIDA-IRP scientists to undertake the first U.S. tests of the marijuana CB1 receptor antagonist, SR141716, in humans.

NIDA'S New/Competing Awards Since February 1997

1 R03 DA 11009-01 Allen, Sharon S. --- University of Minnesota
1 R01 DA 10117-01A2 Tobacco Cessation in Postmenopausal Women

Anthony, James C. --- Johns Hopkins University Dept. of Mental Hygiene
1 R01 DA 10900-01 Transitions Into Adulthood: The Baltimore Study

Ator, Nancy A. --- Johns Hopkins University Bayview Campus
Functional Analysis of GABAergic Sedative/Anxiolytics

2 R01 DA 07732-04A2 Barr, Gordon A. --- Hunter College Dept. of Psychology
Neurobehavioral Studies of Opiate Drugs in Development

1 R01 DA 10492-01A1 Belknap, John K. --- Oregon Health Sciences University
1 R01 DA 10778-01 Gene Mapping for Sensitivity to Cocaine and Amphetamine

Berridge, Craig W. --- University of Wisconsin--Dept. of Psychology
1 R01 DA 11061-01 Amphetamine-like Stimulants: Norepinephrine and Behavior
Beutler, Larry E. --- University of California
1 R29 DA 11079-01 Prescriptive Therapy for Drug Abuse with Depression

Biemer, Paul P. --- Research Triangle Institute
Assessing the Validity of Self-reported Drug Use

1 U19 DA 11007-01 Block, Robert I. --- University of Iowa Hospital & Clinic
1 R01 DA 10612-01A1 Chronic Marijuana Use: Brain and Cognition

Borkowsky, William --- New York University Medical Center
1 R01 DA 09049-01A3 The Biology of Pediatric Hepatitis C Infection

Brown, Richard L. --- University of Wisconsin/Dept. of Family Medicine
1 U19 DA 10939-01 Decisions to Prescribe Benzodiazepines and Opioids

Bunney, E. Bradshaw --- University of Illinois-Dept. of Emergency Medicine
2 R01 DA 01533-22 Electrophysiology of Cocaine, Ethanol, and Cocaethylene
Burchfield, David J. --- University of Florida-College of Medicine-Dept. of Pediatrics
1 R01 DA 10462-01A1 Cocaine: Effect on Fetal Brain Metabolism and Function

Caggiula, Anthony R. --- University of Pittsburgh-Dept. of Psychology
2 R01 DA 04592-07A1 Smoking, Stress, and Immune Function

Caggiula, Anthony R. --- University of Pittsburgh-Dept. of Psychology 2 R01 DA 04592-07A1
Effects of Self-Administered vs Noncontingent Nicotine

Carr, Kenneth D. --- New York University Medical Center-Dept. of Psychiatry
2 R01 DA 03910-12 Opioid Mechanisms That Facilitate Reward

Cashman, John R. --- Seattle Biomedical Research Institute
1 R01 DA 09421-01A2 Novel Cocaine Esterases

Caton, Carol L. --- New York State Psychiatric Institute
1 R01 DA 10539-01A1 Service Needs in Early Psychosis and Drug Use

Chang, Sulie L. --- Seton Hall University
1 R01 DA 10789-01 Morphine Actions on the Immune System

Corrigall, William A. --- Addiction Research Foundation
1 R01 DA 10871-01 Cholinergic and Opiate Mechanisms in Drug Reinforcement

Daley, Dennis C. --- Western Psychiatric Institute & Clinic
1 U19 DA 10946-01 Dual Diagnosis Adherence Strategies

Dey, Sudhansu K. --- University of Kansas Medical Center-Dept. of Physiology
1 R01 DA 10536-01A1 Effects of Marijuana on Early Pregnancy

Domino, Edward F. --- University of Michigan-Dept. of Pharmacology
Nicotine Effects on Cerebral Blood Flow and Metabolism

1 R29 DA 11005-01 Donahoe, Robert M. --- Emory University
AIDS and Opiates: A Monkey Model

1 R01 DA 08098-01A5 Dwoskin, Linda P. --- University of Kentucky-Pharmacology & Experimental Therapeutics
2 R01 DA 04133-12 Nornicotine Contribution to the CNS Effect of Nicotine

Eisenstein, Toby K. --- Temple University
Opioids, Opioid Receptors, and Sepsis

1 R01 DA 10107-01A1 Fein, George --- San Francisco VA Medical Center
1 R03 DA 11011-01 Chronic Cocaine Abuse Effects on P50 and P3a Erps

Fiorentine, Robert --- UCLA Drug Abuse Research Center
2 R01 DA 04195-11A1 Client Engagement in Drug Treatment

Fox, Barbara S. --- Immunologic Pharmaceutical Corporation
2 R01 DA 06648-07A1 Therapeutic Cocaine Vaccine

Freeman, Robert --- Nova Research Company
1 R01 DA 11054-01 Secondary Analysis of the Wheel Database

Friedman, Samuel R. --- National Development & Research Institute
2 R01 DA 08870-04 HIV Risk among Women IDUs Who Have Sex with Women

Glittenberg, Joann E. --- University of Arizona College of Nursing
1 R01 DA 09545-01A3 Alcohol, Drugs, and Violence in a Mexican American Town

Greenwald, Mark K. --- Wayne State University/Psychology & Behavioral Neuroscience
1 R01 DA 09994-01A2 Behavioral Studies with Methadone Clients

Gruol, Donna L. --- Scripps Research Institute
1 R01 DA 10554-01A1 Drug Effects on Neuronal Development in Pediatric AIDS

Gudelsky, Gary A. --- University of Cincinnati-Dept. of Pharmacy
1 R01 DA 10567-01A1 Microdialysis Studies on MDMA-induced Neurotoxicity

Hienz, Robert D. --- Johns Hopkins Bayview Medical Center
2 R01 DA 05617-07A1 Cocaine: Perceptual and Motor Effects

Hien, Denise A. --- St. Luke's-Roosevelt Hospital Center
1 R01 DA 10563-01A1 PTSD Treatment Outcomes for Cocaine-Dependent Women

Hillard, Cecilia J. --- Medical College of Wisconsin
1 R01 DA 10843-01 Cannanbinoids and Second Messengers in the Brain

Holtzman, Stephen G. --- Emory University School of Medicine
1 R03 DA 11119-01 College on Problems of Drug Dependence Annual Meeting

Huber, Alice --- Matrix
1 R01 DA 10662-01A1 Medication/Behavior Therapy for Methamphetamine Abuse

Iguchi, Martin Y. --- Allegheny University of the Health Sciences
1 R01 DA 10715-01 Using Contingency Management to Enhance Methadone Detox

Itzhak, Yossef --- University of Miami School of Medicine
2 R01 DA 04731-09A1 Role of Glutamatergic/nos Systems in Cocaine Actions

Jones, Reese T. --- University of California
1 R01 DA 10992-01 Pharmacotherapy of Cocaine Addiction

Justice, Joseph B., Jr. --- Emory University-Dept. of Chemistry
1 R01 DA 10606-01A1 Kinetics and Mechanism of Catecholamine Transporters

Kandel, Denise B. --- Columbia University Dept. of Psychology
1 R03 DA 10457-01A1 Substance Dependence/Abuse in the U.S. Population

Kaufman, Marc J. --- McLean Hospital
1 R01 DA 10464-01A1 MR Spectroscopic Imaging of Stimulant Abuse

King, George R. --- Duke University Medical Center-Dept. of Psychiatry
1 R01 DA 08656-01A2 Parameters and Mechanisms of Cocaine Tolerance

Kipke, Michele D. --- Childrens Hospital
1 R01 DA 10468-01A1 Understanding Young Females' Risk & Protective Behaviors

Kosten, Therese A. --- Substance Abuse Center
1 R01 DA 09897-01A1 Neurobehavioral Studies of Dual Drug Addiction

La Gasse, Linda L. --- E P Bradley Hospital
2 R01 DA 04075-08A1 Cocaine Exposure: Reaching, Kinematics, and Cognition

Lechan, Ronald M. --- New England Medical Center
2 R01 DA 09110-03 Role of Protrh-derived Peptides During Opiate Withdrawal

Leslie, Frances M. --- University of California-Dept. of Pharmacology
1 R01 DA 11134-01 Nicotine Regulation of Developing Brain Catecholamines

Lever, John R. --- Johns Hopkins University
2 R01 DA 07165-05A2 3H - and 125I - Labeled Delta Opioid Receptor Ligands

Lewis, Michael L. --- UMDNJ/Robert W Johnson Medical School
1 R01 DA 10521-01A1 Emotional Regulation and Stress React in Prenatal Cocaine Exposure

Lindenberg, Cathy S. --- Emory University
1 R01 DA 10084-01A1 Latina Atod & Sexual Risk Prevention Intervention

Liu-chen, Lee-yuan --- Temple University School of Medicine
2 R01 DA 07058-07 Palmitoylation of the U Opioid Receptor

Loeber, Rolf --- Western Psychiatric Institute/Clinic
Development and Risk of Juvenile Drug Abuse

Loh, Horace H. --- University of Minnesota-Dept. of Pharmacology
1 R01 DA 10864-01 Structural and Functional Studies of Mu Opioid Receptor

Longshore, Douglas --- UCLA Drug Abuse Research Center

2 R01 DA 04334-11 Linking DUF and Criminal History Data

Lysle, Donald T. --- University of North Carolina-Dept. of Psychology
2 R01 DA 01583-20 Opioid-Induced Alterations of Immune Status

Madden, John J. --- Georgia Mental Health Institute
1 R01 DA 10021-01A1 5th Conference: Drug Abuse, Immunomodulation and AIDS

Martinez, Joe L., Jr. --- University of Texas-Division of Life Sciences
1 R01 DA 10325-01A1 Enkephalin and Learning

Mehta, Sudhir K. --- Case Western Reserve University
2 R01 DA 04050-09A2 Cocaine Exposed Infants: Cardiac Problems and Outcome

Mello, Nancy K. --- Mc Lean Hospital-Dept. of Psychiatry
1 R01 DA 10887-01 New Strategies for Anti-cocaine Medications

Metsch, Lisa R. --- University of Miami School of Medicine
1 R01 MH 54171-01A2 Drug Use and Health Services Utilization of HIV+Women

Morishima, Hisayo O. --- Columbia University of the Health Sciences
2 R01 DA 04208-08A2 Perinatal Polydrug Abuse: Cocaine & Drug Interactions

Mosberg, Henry I. --- University of Michigan-College of Pharmacy
1 R01 DA 10438-01A1 Conformation - Selectivity Relations of Opioid Peptides

Nair, Madhavan P. --- Buffalo General Hospital
1 R03 DA 10408-01A1 Cocaine Associated Encephalopathy in AIDS

Pickel, Virginia M. --- Cornell University Medical College
1 R01 DA 11018-01 EM-Transmitter Interactions of Striatal Opioid Neurons

Portoghese, Philip S. --- University of Minnesota-Dept. of Medicine Chemistry
1 R01 DA 10646-01A1 Selective Nonpeptide Opioid Ligands

Price, Rumi K. --- Washington University-Dept. of Psychiatry
1 R03 DA 09980-01A1 Cross-Cultural Epidemiology of Drug Abuse - Phase I

Prichep, Leslie S. --- NYU Medical Center
2 R01 DA 07427-04A3 Biobehavioral Heterogeneity in Crack Cocaine Dependence

Prinz, Ronald --- University of South Carolina
1 R01 DA 08584-01A4 Risk Reduction via Promotion of Youth Development

Pyle, Sally J. Rutgers --- University/Dept. of Pharmacology & Toxicology
1 R03 DA 10817-01 Cocaine, G-proteins and Cytoskeleton in Neurite Growth

Rocha, Beatriz D. --- University of North Texas Health Sciences Center
1 R01 DA 10546-01A1 PR Schedule of Reinforcement in 5ht1b Knockout Mice

Ronnekleiv, Oline K. --- Regon Regional Primate Research Center
1 R01 DA 10913-01 Maternal Cocaine Abuse: Effects on Fetal Neurogenesis

Rush, Craig R. --- University of Mississippi Medical Center-Dept. of Psychiatry
1 R01 DA 10681-01 Cocaine Discrimination and Pharmacological Specificity

Ruth, James A. --- University of Colorado Health Science Center
2 R01 DA 06668-06A1 Mechanisms of Drug Deposition in Hair

Sagen, Jacqueline --- Cytotherapeutics, Inc.
1 R03 DA 10937-01 Opioid Cell Transplants for Pain Alleviation

Santisteban, Daniel A. --- University of Miami
1 R03 DA 10896-01 Developing Family Therapy for BPD Drug Abusing Youths

Schenk, Susan S. --- Texas A&M University-Dept. of Psychology
1 R01 DA 10440-01A1 Kappa-Opioid Agonists and Cocaine-Sensitization

Schuster, Charles R. --- Wayne State University School of Medicine
2 R01 DA 04600-09 Fluoxetine in Smoking Cessation Treatment

Seage, George --- Abt Associates, Inc.
1 R01 DA 09453-01A2 Drug-involved Women's Acceptance of Vaginal Microbicides

See, Ronald E. --- Washington State University-Dept. of Psychology
2 R01 DA 07707-04A1 Basolateral Amygdala: A Substrate for Relapse

Singer, Merrill --- Hispanic Health Council
2 R01 DA 06866-04A2 Intertwined Epidemics among Puerto Rican Drug Users

Sopori, Mohan L. --- Lovelace Institutes
2 R01 DA 08075-04A1 Mechanism of Cigarette Smoke-induced Immunosuppression

Spealman, Roger D. --- Harvard Medical School
1 R01 DA 10187-01A2 Nonhuman Primate Model of Cocaine Relapse and Treatment

Staddon, John E. --- Duke University-Dept. of Psychology
1 R01 DA 09394-01A2 Multiple Time Scales in Motivated Behavior

Stark, Raymond I. --- Columbia University-Dept. of Pediatrics
1 R01 DA 09577-01A2 Morphine Kinetics & Dynamics in Maternal & Fetal Baboons

Stein, Michael D. --- Rhode Island Hospital
1 R01 DA 10870-01 Health Care Utilization among Injection Drug Users

Strain, Eric C. --- Johns Hopkins Baview Medical Center
1 K02 DA 00292-01A1 Clinical Research on Drug Abuse

Su, S. Susan --- National Opinion Research Center
1 K01 DA 00306-01A1 Vulnerability to Drug Abuse in High Risk Youth

Tietz, Elizabeth I. --- Medical College of Ohio
1 K01 DA 00301-01A1 Chronic Benzodiazepine Effects on GABA Receptor Complex

Tiffany, Stephen T. --- Purdue University
1 K02 DA 00269-01A1 Opioid Tolerance: Associative and Non-associative Effect

Tortu, Stephanie --- National Development & Research Institute Inc.
1 K02 DA 00334-01 Women Drug Users, AIDS and Social Context

Vlahov, David --- Johns Hopkins University
2 K02 DA 00174-06 Natural History of HIV Infection in Injection Drug Users

Walker, J. Michael -- Brown University-Hunter Lab-Psychology
1 K01 DA 00329-01 Investigations of Precipitated Cannabinoid Withdrawal

Wardlaw, Sharon L. --- Columbia University-Dept. of Medicine
1 K02 DA 00332-01 Opioid Regulation of POMC in the Hypothalamus

Way, E. Leong --- UCSF-Dept. Of Cellular and Mollecular Pharmacology
1 K02 DA 00326-01 28th Annual International Narcotics Research Conference

Weiss, Roger D. --- McLean Hospital
1 K02 DA 00325-01 Treatment of Drug Dependence and Psychiatric Illness

Wightman, Robert M. --- University of North Carolina-Dept. of Chemistry
1 K01 DA 00285-01A1 Dynamics of in Vivo Dopamine Release

Wolgin, David L. --- Florida Atlantic University
1 R13 DA 10986-01 Role of Instrumental Learning in Tolerance to Stimulants

Wright, Anthony A. --- University of Texas Health Science Center
1 R13 DA 10895-01 Memory Procedures for Drug Assessments in Monkeys

Xu, Ming --- University of Cincinnati-Dept. of Cell Biology, Neuroscience
1 R13 DA 11143-01 Role of C-fos in Psychomotor Stimulant Actions

Zahniser, Nancy R. --- University of Colorado Health Science Center
Persistent Cocaine-induced Changes in Clearance

[Home Page][Office of the Director][Report Index][Previous Report Section][Next Report Section]

Archive Home | Accessibility | Privacy | FOIA (NIH) | Current NIDA Home Page

National Institute on Drug Abuse

Director's Report to the National Advisory Council on Drug Abuse

May, 1997

Congressional Affairs

NIDA FY 98 House Appropriations Hearing

On March 4, 1997, NIDA Director Dr. Alan Leshner testified before the House Labor/HHS appropriations subcommittee to discuss the Institute's FY 98 budget request and to provide subcommittee members with information regarding NIDA's ongoing and future research activities. The President's FY 98 funding request for NIH is $13.078 billion, including $521.9 million for NIDA [a $32.8 million increase over FY 97].

Dr. Leshner provided an overview of what he termed an outstanding year in drug abuse research. He highlighted the Institute's series of town meetings to share what has been learned about drug abuse and prevention strategies with other scientists, policy makers, and the public. He described major new research initiatives in treatment, methamphetamine abuse, and children and adolescents; and the application of brain imaging to our understanding of addiction and discussed the importance of these findings in developing effective medications. He also spoke of the importance of preventing initial drug use, especially in young people, and discussed the Institute's efforts to improve drug treatment approaches. Dr. Leshner noted that the Institute has made tremendous progress toward developing anti-cocaine medications, and is working with pharmaceutical companies in this important area.

In response to questions from Committee members Dr. Leshner spoke about NIDA's medications development program, including prospects for the development of a vaccine to prevent drug abuse; the efficacy of needle exchange programs in reducing the spread of blood-borne infections and in getting people into treatment; the recent NIH Workshop on the Medical Utility of Marijuana and findings that suggest more research needs to be conducted in certain areas; tobacco, alcohol and drug use among teenagers; drug abuse and HIV/AIDS in minority populations; the effects of drugs of abuse in increasing dopamine levels in the brain; and vulnerability and resiliency to drug abuse.

Bills of Interest

Two bills are pending in the Senate which would double NIH funding. S. Res. 15, introduced by Senator Connie Mack (R-FL), would double NIH funding over five years. S. 124, introduced by Senator Phil Gramm (R-TX), would double funding over 10 years. Senator Specter (R-PA) is reported to be committed to a 7.5% ($952 million) increase for the NIH this year.

S. 15, Youth Violence, Crime and Drug Abuse Control Act of 1997, was introduced by Senators Joseph Biden (D-DE) and Tom Daschle (D-SD) on January 21. Although the primary purpose of the bill is to control youth crime, it contains a number of provisions that would affect, or are of interest to, NIDA. These provisions are outlined below.

Authorizes $100 million for fiscal years 2001 and 2002 for NIDA's Medication Development Program. Funds would be appropriated from the Violent Crime Reduction Trust Fund.

Incorporates provisions from S. 2051, a bill introduced by Senator Biden in the 104th Congress. These provisions would, in essence, consider an anti-addiction medication an orphan drug; provide incentives for small and medium size pharmaceutical companies to develop an anti-addiction medication for cocaine and heroin; and require the Institute of Medicine to establish criteria for what would be considered an acceptable anti-addiction medication for cocaine and heroin.

Other provisions of the bill would reauthorize the ONDCP through 2002 and provide such sums as necessary for the next 13 years (previous legislation would reauthorize the ONDCP for 8 years). It would require the ONDCP Director, in consultation with the Attorney General and DHHS Secretary, to conduct a study of the effects of the California and Arizona Drug Initiatives. Among the 9 areas to be studied are marijuana usage in the 2 States; usage of other controlled substances in those 2 States; and the perceptions of Arizona and California youth to the dangers of using marijuana and other controlled substances.

S. 193, Human Research Subject Protection Act of 1997, was introduced on January 22 by Senator John Glenn (D-OH. Among its provisions are the requirements that all research involving human subjects apply the common rule protections as provided under federal regulations and that any potential regulatory conflict of interest within the DHHS and the NIH be addressed. It would raise the NIH Office for Protection from Research Risks (OPRR) to the Department level. It also includes provisions relating to classified research.

S. 441, National Trust Fund for Health Research Act, was introduced by Senators Arlen Specter (R-PA) and Tom Harkin (D-IA), the Chairman and Ranking Minority Member on the Senate Labor/HHS appropriations subcommittee. The bill would cause to be set aside approximately 1% of all health insurance premiums for a National Fund for Health Research. The fund would be managed by the NIH, and all resources for health research would be over and above those provided to NIH in the annual appropriations process. Two percent of the total fund would be used for extramural construction and renovation of research buildings and facilities and an additional 2% would go to the NIH Director for intramural construction and renovation as well as other activities supported by the Office of the Director. Each NIH Institute would be allocated a percentage based on the amount each Institute received of the total NIH appropriation for a specific fiscal year.

H.R. 309, was introduced on January 7 by Representative Gerald Solomon (R-NY) to prohibit federal departments and agencies from conducting or financing any study or research involving the legalization of drugs.

H.R. 956, Drug Free Communities Act, was introduced by Reps. Portman (R-OH), Hastert (D-MI), Levin (D-MI), and Rangel (D-NY). The bill would amend the National Narcotics Leadership Act of 1988 to establish a program to support and encourage local communities that first demonstrate a comprehensive, long-term commitment to reduce substance abuse among youth. The bill was endorsed by the National Security, International Affairs and Criminal Justice Subcommittee of House Government Reform and Oversight on March 13, following a hearing. The bill would provide about $10 million of the $16 billion FY 98 federal drug control budget for technical and financial support through grants to community-based anti-drug coalitions that are demonstrating a commitment to fighting drugs.

Hearings of Interest

Biomedical Research Priorities -- May 1: The Senate Labor and Human Resources Subcommittee on Public Health and Safety, chaired by Bill Frist (R-TN), held a hearing on biomedical research priority setting in the NIH.

Informed Consent -- May 8: NIH Director Dr. Harold Varmus has been asked to testify at a hearing before the House Government Reform and Oversight Subcommittee on Human Resources, which is chaired by Representative Christopher Shays (R-CT). The hearing will focus on issues related to informed consent, including issues related to needle exchange, the mentally challenged, and children. NIDA, NIMH, NICHD, and the NIH Office of Extramural Research have been asked to be present. Relevant to drug abuse, Subcommittee staff have been interested in the Anchorage Alaska Needle Exchange study.

[Home Page][Office of the Director][Report Index][Previous Report Section][Next Report Section]

National Institute on Drug Abuse

Director's Report to the National Advisory Council on Drug Abuse

May, 1997

International Activities

NIDA Director, Dr. Alan I. Leshner traveled to Hong Kong in late January 1997 to deliver the keynote speech at the 2nd International Conference on Drug Abuse: Biopsychosocial Perspectives hosted by the Chinese University of Hong Kong. The topic of his presentation was "Drug Abuse Research: Building International Partnerships".

Dr. Jean-Lud Cadet, IRP, presented Induction of Bclxs and Bclxl by METH in Immortalized Neural Cells and Dr. Tsung-Ping Su, also of IRP, presented Novel Actions of Delta Opioid Peptide DADLE at the 2nd International Conference on Drug Abuse in Shatin Town Hall, Shatin, N.T. Hong Kong, January 26-30, 1997.

On February 5, 1997 NIDA Deputy Director Richard A. Millstein presented a report on recent NIDA collaborative activities in the area of drug abuse prevention since June 1996 with Russia at the 5th Gore-Chernomyrdin Health Committee Meeting held at NIH. Because of rapidly emerging problems with drug use and health consequences such as HIV, tuberculosis and hepatitis, Russia requested the addition of drug abuse research as an area of bilateral cooperation under the health agreement. Mr. Millstein reported on activities such as the exchange of letters between NIDA and the Pavlov State Medical University for scientific collaboration and exchange in the fields of biomedical and behavioral research; exchange visits to NIDA grantees for proposal preparation; and participation in international meetings.

Dr. Rachel Bar-Hamburger, Director of Research for the Israel Anti-Drug Authority, made a study visit to NIDA from February 21 through March 4, 1997. During her stay, Dr. Bar-Hamburger visited with the NIDA director, division directors, the Intramural Research Program and many staff to gain a broad understanding of the Institute's organization, functions, mission and research priorities.

On March 7, 1997 the review committee for the NIDA Hubert H. Humphrey Drug Abuse Research Fellowship met to select Fellows for the 1997-98 academic year. Four prospective Fellows -from Hungary, India, Nigeria, and Ukraine - were selected to participate in the program at Johns Hopkins University. This NIDA-supported portion of the Humphrey Program includes a six-week or longer professional affiliation with a NIDA grantee to design a research proposal for implementation in the Fellow's home country.

Dr. Jörn Sonnenburg of the German Federal Ministry for Education, Science, Research and Technology (BMBF) visited Dr. M. Patricia Needle, Acting Director, International Program, on March 25, 1997 to discuss follow up to the November 1966 seminar, a progress review of projects funded by BMBF to initiate addiction research as a new area of study in Germany. The BMBF Advisory Board will meet in April to review guidelines and further funding.

During April 1997 Dr. M. Patricia Needle attended the conference of the American Methadone Treatment Association in Chicago to chair a session with international methadone researchers.

Dr. Needle also participated in the Latin American regional conference of the World Federation of Therapeutic Communities to plan with the Scientific Committee for a NIDA workshop at the forthcoming World Congress in 1998.

NIDA's International Program has recently arranged presentations by Institute staff for eight groups of international visitors. These include 5 groups representing 15 countries sponsored by the United States Information Agency, and 3 private groups from Japan and Israel.

Dr. Barry Hoffer, Scientific Director, traveled to Sweden and Taiwan during 1996 for continued collaboration with colleagues at the Karolinska Institute in Stockholm and the National Defense Medical Center in Taipei. The cooperation with Sweden involves studies on spinal cord regeneration and Parkinson's Disease. In Taiwan, Dr. Hoffer is collaborating on research related to cerebral ischemia and stroke.

NIDA researchers have submitted a total of 12 grant applications, 10 extramural and 2 intramural, to the U.S. Civilian Research and Development Foundation (CRDF) for support for collaborative research with Russia. The First U.S.-Russian Conference on Emerging and Reemerging Infectious Diseases (EREIDs) was held in December 1996 in St. Petersburg with support from the CRDF. Dr. Peter Hartsock, Community Research Branch, DEPR, collaborated with colleagues at NIAID, the NIH Office of AIDS Research, the Fogarty International Center, and the Russian Ministries of Science and Health in organizing the conference. The meeting received recognition by the PHS Office of International Health as part of the Gore-Chernomyrdin initiatives for U.S Russian health cooperation, and as part of the June 1996 Presidential Decision Directive on EREIDs.

Dr. Peter Hartsock also participated in the World Health Day activities on April 7, 1997. Sponsored by the World Health Organization, its focus this year is "Emerging Infectious Diseases: Reduce the Risk." The World Health Day was held at the Pan American Health Organization's headquarters in Washington, D.C. Dr. Hartsock gave a presentation on U.S.-Russian collaborative research efforts in emerging and reemerging infectious diseases (EREIDs) and on NIDA's work on EREIDs.

Dr. Zili Sloboda of DEPR gave a keynote presentation at the First European Conference on the Evaluation of Drug Prevention sponsored by the European Monitoring Center for Drugs and Drug Addiction held in Lisbon, Portugal on March 12-15, 1997. The topic of her presentation was: State of the Art of Prevention Science in the United States.

Moira O'Brien, Epidemiology Research Branch, DEPR, participated in the Pan American Health Organization Annual Epidemiology Meeting which was held in Ciudad Juarez, Mexico, March 12 14, 1997.

Dr. Jack Blaine, Chief, Treatment Research Branch, DCSR participated in a workshop on Alternative Nicotine Delivery Systems in Toronto, Canada March 21-23, 1997. The workshop was sponsored by the Addiction Research Foundation, the American Society of Addiction Medicine and the Ontario Tobacco Research Unit of the Center for Health Promotion, University of Toronto. International experts on tobacco and nicotine presented and discussed current scientific knowledge and developed information useful for making policy recommendations based on the workshop.

Dr. Chiiko Asanuma of the Etiology and Clinical Neurobiology Branch, Division of Clinical and Services Research, was an invited speaker at the COE International Symposium on Brainstem Control of Sensorimotor Systems: Behavioral Aspects. The symposium covered a broad range of topics that included Sleep/Wake Regulating Systems, Thalamocortical Functions, and Neural Plasticity, and was held from March 23 through March 26, 1997 at the National Institute for Physiological Sciences in Okazaki, Japan.

Mr. Nicholas Kozel (DEPR) co-chaired a joint meeting of the East and South Asian Multi-City Epidemiology Work Group meeting held in Langkawi, Malaysia on November 10-14, 1996. The East and South Asian Work Groups are composed of researchers from Malaysia, Singapore, the Philippines, Thailand, Burma, China, Laos, Cambodia, Vietnam, Bangladesh, India, Nepal, Pakistan, Sri Lanka and Turkey. This is one of a series of regional programs being developed to provide assessment and surveillance of drug abuse with the objective of integrating these regional data into a global perspective. The project is jointly funded by the U.S. Department of State and the Commonwealth Secretariat and is coordinated by staff of NIDA and the Universiti Sains Malaysia. Although indirect indicators and other measures of drug abuse are under development in the various countries of the region, current sources of

information show that the primary drugs of abuse include: inhalants which is a region wide problem, especially among youth; cannabis and heroin which are serious problems in most of the countries in East and South Asia; buprenorphine which has recently emerged as a serious problem in several of the countries of South Asia; abuse of amphetamines and methamphetamines in the countries of Thailand, the Phillipines and Cambodia; and polydrug abuse, particularly with codeine, tranquilizers and sedative-hypnotics. In addition, "ecstasy" is appearing in several countries of the region.

Mr. Nicholas Kozel, DEPR, participated in the Inter-American Drug Abuse Data System (SIDUC) meeting held in Mexico City on February 12-14. SIDUC is a drug abuse epidemiologic surveillance program being implemented by the Organization of American States with the objective of establishing a uniform system of drug abuse indicator data collection in all of the countries of the Americas. The program is in the initial stages of constructing and pilot testing a data collection instrument in selected countries. A preliminary report is due in October 1997.

Mr. Nicholas Kozel, DEPR, participated in the South African Community Epidemiology Network on Drug Abuse (SACENDU) in Cape Town, South Africa on February 26-27, 1997. SACENDU is sponsored by the World Health Organization (WHO) and is in the preliminary stages of developing a multi-city drug abuse surveillance program in the country based on epidemiologic and ethnographic data. South African participants reported that historically, the most serious substance abuse problem in the country has involved alcohol, cannabis and Mandrax. Recently, new drugs have appeared including heroin, cocaine, LSD and ecstasy.

WHO officials have expressed interest in supporting the participation of several other countries from southern Africa in SACENDU with the prospect of establishing a regional epidemiologic surveillance program.

In March 1997, Sari Izenwasser, IRP, presented a lecture entitled Mechanisms of Cocaine Addiction to the Department of Pharmacology, Yonsei University College of Medicine in Korea.

[Home Page][Office of the Director][Report Index][Previous Report Section][Next Report Section]

Archive Home | Accessibility | Privacy | FOIA (NIH) | Current NIDA Home Page

National Institute on Drug Abuse

Director's Report to the National Advisory Council on Drug Abuse

May, 1997

Meetings/Conferences

On February 6, 1997, NIDA co-sponsored a day-long symposium with the journal Hospital Practice (a publication of McGraw-Hill Companies, Inc.). The symposium, entitled "New Understandings of Drug Addiction" was chaired by Dr. Alan Leshner. The purpose of this meeting was to bring primary care physicians current information on the biology of drug addiction and its implications for treatment. Proceedings from the symposium were published in a Hospital Practice Special Report which was distributed in April 1997 to over 60,000 practicing physicians.

On Friday April 18, 1997 NIDA co-sponsored with the American Society of Addiction Medicine a day long Symposium entitled "Maximizing Treatment Effectiveness: Applying Research to Practice." This session was held at the annual medical-scientific conference of the American Society of Addiction Medicine, in San Diego California. This was planned by NIDA staff from the Treatment Research Workgroup and the Health Services Research Workgroup as one of the activities for the new NIDA Treatment Initiative. The Symposium was co-chaired by Stephen R. Zukin, M.D., Director of the Division of Clinical and Services Research and Frank Vocci, Ph.D., Acting Director, Medications Development Division.

NIDA organized a "Town Meeting" in Dallas, Texas entitled "Understanding Drug Abuse and Addiction: Myth vs. Reality" on March 24, 1997. Dr. Leshner and NIDA researchers discussed ways that policy makers, organizations, schools, and communities can utilize the latest scientific research to assess state and local drug problems and develop programs to meet these needs.

On April 1-2, 1997, Institute staff represented NIDA in an NIH Office of AIDS-sponsored FY 1999 Planning Workshop on AIDS Research. Each member worked for several months to prepare a Draft Plan that was finalized at the Workshop. Katherine Davenny and Harry Haverkos, M.D., worked on issues related to the Natural History of AIDS and Drug Abuse; Henry Francis, M.D. (Chief, CMB), worked on Etiology and Pathogenesis, and Vaccines; Jag Khalsa, Ph.D., worked on various aspects of Therapeutics including chemopreventive interventions for HIV/AIDS in drug abusers; and Richard Needle, Ph.D. and Steven Gust, Ph.D., represented NIDA on the Behavioral and Social Sciences Research Workgroup.

NIDA Director Alan I. Leshner and Deputy Director Richard A. Millstein held a mini-retreat with CSAT Director David Mactas and CSAT Deputy Director Camille Barry to discuss drug abuse research and the SAMHSA Knowledge Development and Application (KDA) program, December 30, 1996.

On March 20-21, 1997, the Special Populations Office sponsored a two-day research development seminar in Bethesda, MD, for recipients of NIDA minority supplement awards. The workshop provided technical assistance to 15 recipients at the post-doctoral and investigator levels.

On April 21, 1997, the Special Populations Office as part of its Historically Black Colleges and Universities (HBCU) Initiative held a one-day meeting with HBCU administrators.

On April 15, 1997, as part of NIDA's HBCU Initiative, a half-day university seminar on drug abuse and neuroscience was held at Howard University. Dr. Leshner was the keynote speaker and presentations were made by NIDA grantees and Howard faculty members engaged in drug abuse research.

On February 14-15, 1997, as part of NIDA's HBCU Initiative, a technical assistance workshop was held with faculty members from approximately 10 HBCU.

NIDA Deputy Director Richard A. Millstein gave a presentation on what we know about drug abuse before Montgomery County Public School Security Officers at the University of Maryland, Shady Grove Campus, on January 31, 1997.

NIDA Deputy Director Richard A. Millstein met with ONDCP Deputy Director, Dr. Hoover Adger and ONDCP Deputy Director for Demand Reduction Ricia McMahon on NIDA's history, goals, mission and research program on February 12, 1997.

NIDA Deputy Director Richard A. Millstein was a speaker at the Special Populations Research Development Seminar Series for Recipients of Research Supplements for Underrepresented Minorities on March 20, 1997 in Bethesda, MD.

NIDA Deputy Director Richard A. Millstein spoke to the newly formed CEWG Advisory Group at its initial meeting on March 26, 1997.

On April 11, 1997, Pamela Goodlow, Special Populations Office, and Arnold Mills, Community Research Branch, presented NIDA's HBCU Initiative at the Twenty-First National Conference on Blacks in Higher Education sponsored by the National Association for Equal Opportunity in Higher Education (NAFEO) in Washington, DC.

On April 18, 1997, Lula Beatty presented at a session on Faculty Research and Training Opportunities in Social and Behavioral Sciences at a national conference sponsored by the National Science Foundation held in New Orleans, LA.

On February 7, 1997, Lula Beatty presented an overview of drug abuse research for the NIH Extramural Scientists program.

On February 28, 1997, Lula Beatty held a round table on drug abuse research at a meeting sponsored by the Office on Ethnic Affairs of the American Psychological Association in Washington, DC.

Lula Beatty attended the meeting of the Committee for Women In Psychology as liaison from the Division of Women, American Psychological Association.

Dr. Frank Vocci presented an overview on NIDA-VA clinical trials research at a VA sponsored meeting entitled The Impact of VA Research on the Management of Substance Abuse Disorders. The meeting was held in Washington, D.C. on February 26, 1997.

Dr. Frank Vocci presented at a workshop entitled Buprenorphine: An Update on its Development at the American Methadone Treatment Association meeting in Chicago on April 14, 1997. Drs. Eric Strain of Johns Hopkins University, Dr. Walter Ling of ULLA, and Dr. John Mendelson of UCSF were co-presenters. Dr. Vocci and Mr. Joel Egertson also presented an update on the use of LAAM.

Dr. Frank Vocci and Dr. Steven Zukin (DCSR) co-chaired the NIDA/American Society of Addiction Medicine Symposium entitled Maximizing Treatment Effectiveness: Applying Research to Practice on April 18, 1997 at the ASAM meeting in San Diego, CA.

Dr. Peter Cohen, MDD participated in a Symposium at the annual meeting of the American Society of Addiction Medicine held on April 18, 1997, entitled Maximizing Treatment Effectiveness: Applying Research to Practice, co-sponsored by NIDA and ASAM.

Dr. David McCann, Chief of the Pharmacology and Toxicology Branch, presented an overview of efforts within the Medications Development Division to a group of approximately 30 journalists on February 19, 1997. The presentation, given at the NIDA Addiction Research Center in Baltimore, was part of a week-long lecture series focusing on the war on drugs.

Dr. Jack Blaine, Chief, Treatment Research Branch, DCSR participated in a meeting in New York City on May 1-2, 1997 to plan the analysis for the Drug and Alcohol Use Disorders Reliability and Validity data from the WHO-NIH Joint Project on Diagnosis and Classification of Mental Disorders, Alcohol and Drug Related Problems.

On April 23-24, 1997, Drs. Lisa Onken and Jack Blaine, both of DCSR, chaired the first meeting of NIDA Stage I investigators whose funding began in fiscal years 1995-1997. The purpose of this meeting was to facilitate NIDA's Stage 1 behavioral therapies development research program. Investigators discussed inherent difficulties in conducting Stage 1 projects, and in progressing from a successful Stage I project to Stage II. Senior Stage I investigators (funded in 1993/1994) were present to share their experience in conducting an early behavioral therapy development research project.

On February 20, Drs. Stephen R. Zukin and Lisa Onken met with representatives of the American Society of Addiction Medicine to discuss NIDA's Treatment Initiative. On March 3, they met with representatives of the National Association of Alcohol and Drug Abuse Counselors for the same purpose. Both groups provided valuable input to NIDA on the Initiative, and expressed great interest in the Initiative.

On April 15, 1997 NIDA held a meeting on the NIDA-funded Methadone Treatment Quality Assurance Feasibility Study with State Methadone Authority representatives and treatment providers participating in the field trial of MTQAS. This session was held at the American Methadone Treatment Association in Chicago and was co-sponsored by CSAT. The purpose of this meeting was to address the feasibility of developing and implementing a performance-based monitoring system in narcotic addiction treatment to improve program performance and also to discuss using this approach in an accreditation process. NIDA participants included Dorynne Czechowicz, M.D. and James Cooper, M.D. The CSAT participants were Dr. Joyce Johnson, Richard Sampson and Robert Lubran.

On April 16, 1997 NIDA sponsored a workshop entitled "Developing and Using an Outcomes-based Monitoring System In Narcotic Addiction Treatment" at the American Methadone Treatment Association Meeting in Chicago. Representatives from state agencies and providers participating in the NIDA-funded Methadone Treatment Quality Assurance feasibility study field trial participated in the workshop with NIDA staff, Dorynne

Czechowicz, M.D. and James Cooper, M.D. Information was presented on how MTQAS may be used for monitoring and improving program performance.

Dr. Joseph Frascella, Chief of the Etiology and Clinical Neurobiology Branch, Division of Clinical and Services Research, participated in a recent NIDA Research Development Seminar for Minority Supplement Recipients where he gave a presentation on the NIH grant process and served as a faculty mentor. The meeting was held in Bethesda, Maryland on March 21-22, 1997.

Dr. David Shurtleff was a discussant at the National Bureau of Economic Research sponsored meeting entitled The Economic Analysis of Substance Use and Abuse: An Integration of Econometric and Behavioral Economic Research in Boston, March 27-28, 1997.

Dr. Cora Lee Wetherington chaired a session at the National Bureau of Economic Research sponsored meeting entitled The Economic Analysis of Substance Use and Abuse: An Integration of Econometric and Behavioral Economic Research in Boston, March 27-28, 1997.

Dr. Jaylan Turkkan and Dr. David Shurtleff presented a symposium at the University of Maryland College Park about behavioral and cognitive approaches to drug abuse and addiction, including recent program initiatives. The Behavioral Sciences Research Branch will next be traveling to Columbia University, and then to the University of Pennsylvania to interact with faculty and students, and to present information about NIDA's initiatives.

Dr. Jaylan Turkkan attended the annual meeting of Chairmen of Graduate Departments of Psychology (COGDOP) in Savannah, Georgia, where she presented information about funding opportunities in behavioral and cognitive sciences.

Dr. Jag Khalsa of the Clinical Medicine Branch, DCSR, participated in a NIH-sponsored meeting entitled On the Threshold of Discovery: Merging Science and Supplements to Promote Health, A Strategic Plan for the Office of Dietary Supplements. This was a major meeting where many NIH ICDs were represented to finalize a plan for further research on dietary supplements.

Dr. Peter Delany participated with other NIH representatives on a panel entitled How to Enhance Federal Funding Opportunities at the Annual Program for the Council of Social Work Education in Chicago on March 7, 1997.

On April 7, 1997, Dr. Bennett Fletcher hosted a Health Services Research Seminar on Findings from the Drug Abuse Treatment Outcome Study (DATOS). Presentations were given by Dr. Fletcher, Dr. Dwayne Simpson from Texas Christian University, Dr. Robert Hubbard from NDRI, and Dr. Douglas Anglin from UCLA. The seminar presented a first look at DATOS post treatment outcomes.

On April 12, 1997, Dr. Fletcher served as a discussant on a panel that presented research on conducting drug abuse treatment cost and cost-effectiveness studies at the Eastern Psychological Association meeting.

On April 18, 1997, Dr. Fletcher presented a paper at the American Society for Addiction Medicine meeting in San Diego describing changes in patients and treatment programs observed in the DATOS study, and the impact of these changes on how drug abuse treatment is delivered.

Dr. Zili Sloboda and Susan David of DEPR chaired two workshops highlighting the prevention research of Karol Kumpfer and Leona Eggert at the national PRIDE conference held in Atlanta, Georgia on March 6, 1997.

On February 11-13, 1997, Richard H. Needle, Ph.D., MPH, Chief of the Community Research Branch, DEPR participated in the NIH Consensus Development Conference on Interventions to Prevent HIV Risk Behaviors. The purpose of the conference was to examine what is known about behavioral interventions that are effective with different populations in different settings for the two primary modes of HIV transmission: unsafe sexual behaviors and unsafe injection practices.

Peter Hartsock, Dr.P.H., Community Research Branch, DEPR, participated in the NIH Consensus Development Conference on the Management of Hepatitis C, held on March 24-26, 1997.

At the Hispanic Initiative Research Meeting January 28, 1997, Dr. Coryl Jones ERB/DEPR presented a discussion paper on the need to integrate human development research in minority research on drug abuse, particularly socialization of the child in cultural, racial, and ethnic studies.

Dr. Coryl Jones, ERB/DEPR was the invited speaker at The Johns Hopkins School of Public Health Seminar Series held January 29, 1997. Her presentation focused on conceptualizing and operationalizing interdisciplinary drug abuse research and career development.

Dr. Coryl Jones, ERB/DEPR, NIDA representative to the Federal Task Force on Child Abuse and Neglect and member of its Interagency Research Committee on Children, presented a report on the NIDA research portfolio on child abuse at the Fifth Forum on Federally Funded Child Abuse and Neglect Research, March 19, 1997.

On April 28, 1997, Dr. Coryl Jones, ERB/DEPR, and Dr. Bernie Auchter, National Institute of Justice, in collaboration with representatives of 12 agencies collaborating in the NIH Consortium on Violence Against Women and Within The Family will hold the first annual meeting of senior scientific staff of the grants funded by the Consortium.

Larry A. Seitz, Ph.D., PRB, DEPR, presented at the American Association of State Colleges and Universities' Office of Federal Programs Spring Meeting held at the Washington Marriott Hotel on March 17, 1997. This Update on Research Funding in the Area of Alcohol and Drug Abuse Prevention discussed the various research programs and funding opportunities in the area of ATOD prevention.

Dr. Edythe D. London, IRP, gave Grand Rounds Brain Imaging Studies of Substance Abusers at Beth Israel Medical Center held in New York, NY, on February 20, 1997.

Dr. Steven J. Grant, IRP, presented a paper entitled Drug Abusers Show Impaired Performance on a Test of Orbitofrontal Function at the Cognitive Neuroscience

Meeting held in Boston, MA on March 23-25, 1997.

Dr. Steven J. Grant, IRP, gave a seminar entitled Positron Emission Tomography Studies of Cocaine Craving: Cognitive Neuroscience Approach to Addiction at Columbia University, New York, NY on March 26, 1997.

Sari Izenwasser, IRP, presented a lecture entitled Mechanisms of Cocaine Addiction: Relationship to Dopamine Transporter Heterogeneity at Grand Rounds in the Department of Neurology, University of Miami School of Medicine.

[Home Page][Office of the Director][Report Index][Previous Report Section][Next Report Section]

Archive Home | Accessibility | Privacy | FOIA (NIH) | Current NIDA Home Page

National Institute on Drug Abuse

Director's Report to the National Advisory Council on Drug Abuse

May, 1997

Media and Education Activities

Media Advisories

February 13, 1997: Notification that NIH Would Hold a Workshop February 19-20, 1997 at Natcher Conference Center Auditorium to Answer Questions on Medical Research on Marijuana. Presentations were made by scientists on the existing medical and scientific literature on the therapeutic utility of marijuana. The review group's conclusions will assist the NIH Director in considering actions NIH could take to fund research on the therapeutic potential of marijuana for patients with specific illnesses.

March 6, 1997: New Research-Based Guide Now Available To Help Prevent Teen Drug Use. The National Institute on Drug Abuse released on March 6, 1997 the first research-based guide to preventing young people from using drugs. The guide is entitled, "Preventing Drug Abuse Among Children and Adolescents: A Research-Based Guide".

March 10, 1997: Dallas Town Meeting to Promote Understanding and Dispel Myths About Drug Abuse and Addiction. The National Institute on Drug Abuse, National Institutes of Health (NIDA), held a community Town Meeting in Dallas on March 24, 1997. The purpose of the Town Meeting was to discuss the problem of drug abuse in the State of Texas and in the Dallas area, and consider how the results of research could be used to improve the response to the drug problem.

March 14: Workshop to Arm Teachers With the Latest Research on Drug Addiction. Dr. Alan I. Leshner, Director of the National Institute on Drug Abuse, addressed teachers from high schools in the Washington, D.C. metropolitan area during Brain Awareness Week. In the workshop entitled, "The Biology of Addiction: Your Brain on Drugs", Dr. Leshner discussed the latest research on drug abuse and addiction and current strategies for effectively treating and preventing drug addiction.

April 4, 1997: Genetic Basis Indicated for Abuse of Marijuana. Dr. Michael Lyons, Dr. Ming Tsuang, and their colleagues at Harvard Medical School in Boston have found that whether an individual has positive or negative sensations after smoking marijuana is heavily influenced by heredity. This study, funded by NIDA, was published in the April 1997 issue of the international medical journal, Addiction.

Other Press Activities

Parade Magazine Article - On February 9, 1997, "Secrets of the Brain", an article by Earl Ubell, was published in Parade Magazine which featured a section on drug addiction and quotes from NIDA Director, Dr. Alan Leshner.

Press Interest in the Dallas Town Meeting - While in Dallas, Dr. Leshner conducted several interviews with local television, radio and print media. Dr. Leshner was interviewed extensively by the Editorial staff of the Dallas Morning News, an interview that resulted in two editorials in the paper.

Journalists Workshop - Several NIDA staff made presentations to a group of journalists participating in a University of Maryland, Knight Center media workshop. Over 30 journalists from print media in large and small cities spent one day (out of a 5-day "War on Drugs" Workshop) at the Division of Intramural Research learning about various areas of research on drug abuse and addiction and touring the new brain imaging center.

CSAP Media Workshops - NIDA Press Officers, Mona Brown and Sheryl Massaro, made several presentations during CSAP's media workshops for state prevention practitioners (primarily NPN members). The workshops were held in Kansas City, MO and Baltimore, MD. The presentations dealt with updates on NIDA's media and public education activities, handling sensitive and controversial issues, and media spokespersons training.

ABC's March on Drugs - During the month of March, ABC television made a special emphasis/focus on drug abuse, particularly among youth. Throughout the month, much of NIDA's research and information was made available to writers and producers. Dr. Leshner and several other NIDA grantees were interviewed for ABC Prime Time Live's segment on teen marijuana use.

Bill Moyers' PBS Special on Addiction and Recovery - On March 26, Bill Moyers and Public Affairs Television interviewed Dr. Leshner and filmed his research-based presentation to and question/answer session with middle school children at Eastern Middle School in Silver Spring, Maryland. The Moyers team is in the production phase of a 4-hour exploration of addiction and recovery, premiering in late March 1998. The special will cover the science of addiction as well as prevention and treatment issues and will be working with NIDA and NIDA grantees throughout production.

NIDA Exhibits

Pride Conference
March 6-8, 1997
Atlanta GA

Dallas Town Meeting
March 24, 1997
Dallas, TX

Association of Minority Health Professions Schools (AMHPS)
March 26-29, 1997
Houston, TX

Society for Research in Child Development
April 3-6, 1997
Washington, D.C.

National Methadone Conference
April 13-16, 1997
Chicago, IL

International Congress of Behavioral Medicine (ICBM)
April 16-19, 1997
San Francisco, CA

American Society of Addiction Medicine (ASAM)
April 17-20
San Diego, CA

[Home Page][Office of the Director][Report Index][Previous Report Section][Next Report Section]

Archive Home | Accessibility | Privacy | FOIA (NIH) | Current NIDA Home Page

National Institute on Drug Abuse

Director's Report to the National Advisory Council on Drug Abuse

May, 1997

Planned Meetings

On May 30, 1997 NIDA will hold a "Town Meeting" in Chicago, Illinois in partnership with the City of Chicago in order to discuss with policy makers, organizations, community leaders, and practitioners current science-based knowledge about drug abuse and addiction treatment and prevention.

Two NIH research groups, the NIH AIDS Interest Group and the Behavioral and Social Sciences Interest Group, are jointly sponsoring a mini-symposium on "Drug Abuse and AIDS: Research from the Behavioral and Social Sciences" to be held Thursday, July 31, 1997. NIDA staff have been involved in planning this event in conjunction with staff from the Office of AIDS Research and Office of Behavioral and Social Science Research. The mini-symposium will cover the epidemiology of HIV, drug abuse, and related risk behaviors; a behavioral overview of addiction; animal studies of the behavioral consequences of addiction and HIV infection; impulsivity and risk behavior; social network analysis; ethnography; and intervention research on risk reduction and outreach, needle and syringe access and exchange, and drug abuse treatment.

Naimah Weinberg, M.D., ERB/DEPR, is organizing a workshop on child psychiatric conditions in the etiology of drug abuse. The meeting,"Childhood Psychopathologic Risk Factors for Drug Abuse: Deficits and Mechanisms" will be held in the Washington area on July 9 and 10, 1997. Experts in the areas of child and adolescent psychiatric disorders, comorbidity, etiology, temperament, neuropsychology, epidemiology, behavior genetics, and family dynamics will participate.

DEPR's Community Research Branch along with the Division of Clinical and Services Research and the NIDA Office on AIDS is planning a meeting to synthesize the findings from NIDA-funded HIV prevention research. The meeting will be held in Flagstaff, Arizona on August 4 and 5, 1997.

DEPR, DCSR, MDD, DBR and the ARC are planning a national conference on research related to heroin to be held on September 29 and 30, 1997 at the Hyatt-Crystal City. The objective of the conference is to increase the understanding and heighten awareness of heroin addiction: nature, extent and changing trends in use patterns; biological and behavioral bases; consequences; and prevention and treatment. In addition to NIH researchers, the audience is intended to include key prevention, treatment and criminal justice leaders and decision makers and practitioner groups.

Cognitive Science Symposium sponsored by the Behavioral Sciences Research Branch, DBR - "Cognitive Science Research: Applications to Drug Abuse", to be held at the College on Problems of Drug Dependence meeting in Nashville TN on June 17, 1997. Presentations will cover animal cognition, drug and alcohol effects on mood and on cognitive abilities such as information processing.

NIDA/American Psychological Society Sponsored Symposium -- An all-day satellite meeting entitled Cognitive Science Research: More Than Thinking About Drug Abuse will be held at the Washington Hilton Hotel on May 23, 1997. The meeting, sponsored by the NIDA's Behavioral Science Working Group, will feature many distinguished cognitive researchers who will speak on the role of cognitive science in understanding the problem of drug abuse and addiction. Topics include animal cognition, the effects of drugs of abuse on cognitive ability, information processing, social cognition, and cognitive aspects of drug treatment and therapy.

American Psychological Society Federal Funding Poster Session -- NIDA staff from the Basic, Clinical and Review sections will be available at the Federal Funding Poster Session on May 24 at the annual meeting of the American Psychological Society.

Basic Behavioral and Cognitive Factors in HIV/AIDS and Drug Abuse -- This workshop sponsored by the Behavioral Sciences Research Branch (Division of Basic Research) will be held in the Washington D.C. area on July 29 and 30, 1997. The aim of the workshop is to bring together researchers within and outside of the drug abuse research community to explore how basic research in particular can be profitably employed to understand the behavioral and cognitive antecedents of HIV infection, and the interactive effects of HIV and drug use in addicts.

Society for Neuroscience Evening Symposium: What Do We Really Know About Mouse Behavior? -- sponsored by the Behavioral Science Working Group. Jacqueline Crawley (NIMH) and Cindy Miner (NIDA) as co-chairs will host speakers on mouse species behavioral differences, rat:mouse differences, behavioral paradigms as used to evaluate transgenic and knockout mice, and mouse ethobiology and behavior.

The MDD Pharmacology and Toxicology Branch will hold a review of progress under the first year of its cardiotoxicology contract. One of the key aspects of this contract is to develop methods to evaluate the cardiovascular effects of potential treatment agents in the presence of cocaine. Thus, the contractor will present a review of the progress on this phase of the contract. The contractor's accomplishments/planned activities will be assessed by a group of consultants who are actively engaged in preclinical cardiovascular research.

Staff from the Medications Development Division will attend and participate in a day-long satellite meeting on "Cocaine and a Changing Brain." at the Society for Neuroscience meeting in October. A stellar cast of speakers has been assembled including Bertha Madras, Frank White, Nancy Zahniser, Bert Weiss, and Nora Volkow.

[Home Page][Office of the Director][Report Index][Previous Report Section][Next Report Section]

National Institute on Drug Abuse

Director's Report to the National Advisory Council on Drug Abuse

May, 1997

Publications

Preventing Drug Use Among Children and Adolescents: A Research-Based Guide:

NIH Publication #97-4212, NCADI #PHD734

This guide is designed to provide important research-based concepts and information to further efforts to develop and carry out effective drug abuse prevention programs. The information contained in this document was developed in consultation with prevention scientists. This guide presents an overview of the research on the origins and pathways of drug abuse, the basic principles derived from effective drug abuse prevention research, and the application of research results to the prevention of drug use among young people.

Epidemiologic Trends in Drug Abuse -Advance Report, December 1996

NIH Publication #97-4203

The Advance Report is biannual and provides descriptive information on the most recent significant trends, emerging problems and populations at risk. The style of the report is designed for a wide audience and is intended to alert researchers, program officials and the general community to the current status of drug use and abuse.

Epidemiologic Trends in Drug Abuse -Executive Summary, Volume I, December 1996

NIH Publication # 97-4204

Volume I of this report provides a detailed and quantitatively driven overview of current drug abuse patterns and trends. The report provides program administrators and officials with specific indicators and ethnographic information on current patterns and trends as well as emerging problems.

Epidemiologic Trends in Drug Abuse -Meeting Proceedings, Volume II, June 1997

NIH Publication #97-4205

Volume II of this report contains the edited research reports submitted by the Work Group participants and special presentations made at the biannual meetings. It provides an in-depth analysis of the epidemiologic trends and special reports for a limited audience made up primarily of drug abuse researchers who can utilize this volume to identify potential areas for further research.

Meta-Analysis of Drug Abuse Prevention Program

NIH Publication #97-4146

The purpose of this monograph is to inform the drug abuse prevention research and practitioner community of recent advances in research integration methods and scientific findings in the area of drug abuse prevention programs.

The Validity of Self-Reported Drug Use: Improving the Accuracy of Survey Estimates

NIH Publication #97-4147

This monograph reviews and presents cutting-edge research on the validity of self-reported drug use and discusses methodological advances designed to reduce total error on estimates involving drug use data.

The Problems of Drug Dependence 1996: Proceedings of the 58th Annual Scientific Meeting of the College on Problems of Drug Dependence

NIH Publication #97-4226

This volume provides the most current information regarding the findings of preclinical and clinical researchers. The contents are written by participants in the annual scientific meeting.

The Treatment of Comorbid Mental and Addictive Disorders

NIH Publication #97-4172

The purpose of this monograph is to promote the effective treatment of individuals with comorbid mental and addictive disorders by reporting state-of-the-science treatment research on individuals with comorbid mental and addictive disorders, and research on HIV-related issues in this population.

Hilborn, M.D., Rane, S.G., and Pollock, J.D. EGF in Combination with Depolarization or cAMP Produces Morphological but not Physiological Differentiation in PC12 Cells. J Neurosci Res 47(1), pp. 16-26, 1997.

Mingting, T., Broxmeyer, H.E., Fan, Y., Lai, Z., Zhang, S., Aronica, S., Cooper, S., Bigsby, R.M., Steinmetz, R., Engle, S.J., Mestek, A., Pollock, J.D., Lehman, M.N., Jansen, H.T., M.Y., Stambrook, P.J., Tischfield, J., and Yu, L. Altered Hematopoiesis, Behavior, and Sexual Function in μ Opioid Receptor-Deficient Mice. J. Exp. Med. 185, pp. 1517-1522, 1997.

Delany, P. Shaping the Drug Abuse Research Agenda: The Role of Social Work, Invited Commentary in Issues of Substance, 2(1), 1997.

Acri, J.B., Wong, G., Lyon, T., Witkin, J.M., and Basile, A.S. Localization and Pharmacological Characterization of Pigeon Diazepam-Insensitive GABAA Receptors. Neuroscience, 77(2), pp. 371-378, 1997.

Ambrosio, E., Sharpe, L.G., and Pilotte, N.S. Regional Binding to Corticotropin Releasing Factor Receptors in Brain of Rats Exposed to Chronic Cocaine and Cocaine Withdrawal. Synapse, 25, pp. 272-276, 1997.

Najavits, L.M., Gastfriend, D.R., Nakayama, E.Y., Barber, J.P., Blaine, J.D., Frank, A., Muentz, L., and Thase, M. A Measure of Readiness for Substance Abuse Treatment: Psychometric Properties of the RAATE-R Interview. The American Journal on Addictions, 6(1), pp. 74-82, 1997.

Barber, J.P., Frank, A., Weiss, R., Blaine, J.D., Siqueland, L., Moras, K., Calvo, N., Chittams, J., Mercer, D., Salloum, I. Prevalence and Correlates of Personality Disorder Diagnoses Among Cocaine Dependent Outpatients. Journal of Personality Disorders, 10(4), pp. 297-311, 1996.

A chapter entitled "Behavioral Therapy Research: A Conceptualization of a Process," written by Lisa Onken, Jack Blaine, and Robert Battjes, all of DCSR, appeared in the recently published book, Innovative Approaches for Difficult-to-Treat Populations, Henggeler and Santos (Editors), 1997.

A "Special Section" of Psychological Science entitled "Behavioral Therapy Development and Psychological Science" is scheduled to be published in the journal's May 1997 issue. The Special Section, edited by Lisa Onken, is the result of a May 1996 meeting aimed at linking basic behavioral science with behavioral therapy development research.

Hoffer, B.J. and Olson, L. Identification of the Nurr-1 Gene Product as a Critical Transcription Element for the Development of Midbrain DA Neurons. Science, April 11, 1997.

[Home Page][Office of the Director][Report Index][Previous Report Section][Next Report Section]

National Institute on Drug Abuse

Director's Report to the National Advisory Council on Drug Abuse

May, 1997

Staff Highlights

Awards

Dr. Rao Rapaka, Chief of the Basic Neurobiology and Biological Systems Research Branch, DBR, was named as the 1997 recipient of the J. Michael Morrison Award, given by the College on Problems of Drug Dependence. The Morrison award is given every other year for outstanding contributions in the area of scientific administration related to research on drugs of abuse. An inscribed plaque will be presented to Dr. Rapaka at the opening plenary session of the Annual Scientific Meeting, which will be on the morning of June 15, 1997.

Dr. Alexis C. Thompson, IRP, received the 1997 Fellow's Award for Research Excellence (FARE).

Greg Agoston, IRP, received a travel award from the College on Problems of Drug Dependence to attend the 1997 Annual Meeting.

Staff Changes

On April 7, 1997, Ms. Helen Rudd joined NIDA as Secretary to the Chief, Public Information Branch, Office of Science Policy and Communications. Ms. Rudd was formerly with the NIH Clinical Center.

Ms. Janice Walden, formerly with the Walter Reed Army Medical Center, joined NIDA as chief of its Executive Secretariat on April 13, 1997.

On April 14, 1997, Ms. Robin Young joined the Office of Science Policy and Communications as Secretary to the Director. Ms. Young was formerly with the Defense Information Systems Agency.

[Home Page][Office of the Director][Report Index][Previous Report Section][Next Report Section]

Archive Home | Accessibility | Privacy | FOIA (NIH) | Current NIDA Home Page

National Institute on Drug Abuse

Director's Report to the National Advisory Council on Drug Abuse

May, 1997

Grantee Honors

Dr. Klaus Miczek, the Moses Hunt Professor of Psychology, Psychiatry, and Pharmacology at Tufts University and a long term NIDA grantee studying aggression and social stress, was awarded the Knight's Cross of the Order of Merit, the highest award Germany bestows on a civilian. The award was presented in recognition of Dr. Miczek's scientific achievements and his contributions in fostering German-American relations. In addition to being director of the psychopharmacology research laboratory and editor of Psychopharmacology, Dr. Miczek is coordinator at the German Saturday School for children aged 4-17 and is a member of a German literary organization. The award was presented by the German consul general at a ceremony held on January 29, 1997 that was attended by about 100 people including many of Klaus's colleagues from the Boston area.

Dr. Nicholas S. Bodor, graduate research professor of pharmaceutics and executive director of the Center for Drug Discovery of the University of Florida College of Pharmacy, will be honored at the 98th AACP Annual Meeting awards banquet in Indianapolis, Indiana, on July 15 as the 1997 recipient of the AACP Volwiler Research Achievement Award. The AACP Board of Directors selected Dr. Bodor for the Association's premier research award, which is given annually to recognize outstanding research conducted by a pharmaceutical scientist/educator.

NIDA grantee Dr. Howard Liddle of the Center for Family Studies, Department of Psychiatry and Behavioral Science, University of Miami, was the 1996 Recipient of the American Family Therapy Academy Award for Distinguished Contributions to Family Therapy Research. The award was presented in recognition of his research on family-focused therapy for adolescent drug abuse.

[Home Page][Office of the Director][Report Index][Previous Report Section]

Archive Home | Accessibility | Privacy | FOIA (NIH) | Current NIDA Home Page