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

February, 1996

Index

[Office of Director] [First Report Section]

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

Director's Report to the National Advisory Council on Drug Abuse
February, 1996

Research Findings

Basic Research

Cocaine Immunization

Kim Janda, Ph.D., Rocio Carrera, M.A., George Koob, Ph.D. and colleagues at the Scripps Research Institute have demonstrated, for the first time, the ability to immunize rats against some of the stimulant effects of cocaine. The animals were treated for 35 days with a conjugated analog of cocaine that is more resistant to metabolism by esterases and that is recognized by the body as a foreign substance. Antibodies were produced in the rats which prevented the subsequent administration of cocaine from producing its CNS stimulatory effects. Cocaine levels in the brains of these animals were reduced from 50 to 75% from those of rats not subjected to the 35-day pretreatment regimen. Suppression of Psychoactive Effects of Cocaine by Active Immunization. Nature, 378: pp. 727-730, 1995.

The biotechnology company ImmuLogic Pharmaceutical Corp., also recently announced having developed a cocaine vaccine. The details are proprietary, and as yet unpublished. Dr. Barbara S. Fox of ImmuLogic discussed some of the company's findings in Chemistry and Engineering News, December 18, 1995, and at a January 18, 1996 meeting of the Maryland Bioscience Alliance at the request of NIDA's Medications Development Division.

Cocaine and Cardiovascular Toxicity

NIDA supported researchers, Drs. Patrick Abrahams, Kurt Varner and their associates have reported recently that the sympathoinhibitory responses elicited by cocaine and amphetamine are centrally-mediated and involve, in large part, an alpha2 adrenergic mechanism in the rostral ventrolateral medulla. The local anesthetic actions of cocaine appear to have little, if any, role in the sympathetic nerve responses. These findings provide new insights into the site(s) and mechanism(s) by which cocaine and other sympathomimetic stimulants affect sympathetic and cardiovascular function. Abrahams, TP, Cuntapay, MC and Varner, KJ. Physiol Behav, in press; Abrahams, TP, Faust, ML and Varner, KJ. J Auto Nerv Sys, in press.

Prenatal Cocaine: Effects on the Offspring

Dr. Michael Lidow (Yale University) has been investigating the effects of prenatal cocaine in rhesus monkeys on the offspring. Dr. Lidow has found that prenatal cocaine, in doses that produce blood levels approximately equal to those producing a euphoriant dose in humans, resulted in histological changes in the 2-month-old offspring. He reported that 20 mg/kg/day (PO) from days 40 to 102 of gestation resulted in significantly altered lamination of the primate cerebral cortex, in some cases completely blending distinction between individual layers. In addition, autoradiographic analysis revealed that [3H]thymidine labeling occurred in cortical white matter as well as layers IV, V, and VI while control animals showed no labeling in the white matter or in layer IV. These data suggest an inability of cortical cells to reach proper cortical layers. The number of labeled cells was also much lower in the cocaine-treated offspring. Finally, immunocytochemical studies with antisera directed toward glial fibrillary acidic protein showed that prenatal exposure to cocaine had dramatic effects on the glial fibers normally observed in the upper cortical layers.

In many regions, no such fibers were observed. Lidow, M.S. Prenatal Cocaine Exposure Adversely Affects

Development of the Primate Cerebral Cortex. Synapse 21:332-341, 1995.

Understanding the Central Cannabinoid Receptor

The cannabinoid antagonist SR141716A and its corresponding radioligand are expected to be valuable tools in basic research leading to an understanding of the biochemical mechanisms of action of the central cannabinoid receptor, CB1. The use of such tools may lead to the identification of receptor types, mapping of receptor types in brain, and addressing the pathophysiological role of CB1. To date, the synthesis of this compound is not reported from Sanofi Recherche. The first published synthesis of this compound was by NIDA grantees and their colleagues. The publication is entitled "The Synthesis and Pharmacological Evaluation of the Cannabinoid Antagonist SR141716A ", Med Chem Res, 5: pp. 54-62, 1994, by Dutta et al. Another paper that appeared recently was from Seltzman et al., "Synthesis, Spectral Studies and Tritiation of the Cannabinoid Antagonist", J Chem Soc., Chem Commun, 1995. This work was supported by NIDA and this paper describes a simple procedure for making the radiolabeled ligand. Both the cold and the radiolabeled compounds are in the NIDA Drug Supply System.

Conformational Analysis of a Cannabinoid Ligand

CP-55, 940 is one of the high-affinity non-classical cannabinoid receptor ligands. Dr. Makriyannis and colleagues, using a combination of solution NMR and computer modeling methods, studied the conformational properties of the ligand to obtain information on stereoelectronic requirements at the cannabinoid receptor active site. Their manuscript is in press (J Biol Chem). Their data indicates that for the most energetically favored conformation, 1) the aromatic A-ring is perpendicular to the cyclohexane ring, and the phenolic O-H bond is coplanar with the aromatic ring and points away from the cyclohexyl ring; 2) the dimethylheptyl chain adapts one of the four preferred conformations in all of which the chain is almost perpendicular to the A-ring; and 3) an intramolecular H-bond between the phenolic and hydroxypropyl groups allows all three hydroxyl groups to be oriented toward the upper face of the molecule. Such an orientation by the OH groups may be a characteristic requirement for cannabimimetic activity.

Do Endogenous Opioids Play a Role in Nicotine Dependence?

Smokers' ability to quit is compromised by the *nicotine abstinence syndrome*. Dr. David Malin of the University of Houston, a NIDA Shannon awardee, developed a rat model of this syndrome, useful for (1) elucidating the neurobiological mechanisms of the syndrome, and (2) screening putative interventions to ease smoking cessation. Nicotine was infused subcutaneously via osmotic minipump. The pump was removed after 7 days, and the rats were observed for characteristic withdrawal signs (with experimenters blind as to treatment). The signs resembled those of moderate opiate abstinence, and were precipitated by a nicotine antagonist or by the opiate antagonist naloxone, suggesting a major role of the endogenous opioid peptides in nicotine dependence. In nicotine dependent rats, signs were reversed by morphine as well as nicotine itself. Naloxone prevented nicotine alleviation of nicotine abstinence syndrome. These results further support the hypothesis that the release of endogenous opioids plays a role in nicotine dependence. David H. Malin et al., Pharmacol. Biochem. Behav. 53(2), in press.

Morphine Inhibits Spontaneous and Cytokine Enhanced Natural Killer Cell Cytotoxicity in Volunteers

Opioids are used by patients who have conditions ranging from the acute pain of surgery and chronic cancer pain to substance abuse. This study was designed to evaluate the in vivo effect of morphine on human peripheral blood immune functions. {Animal studies indicate that the naive subject's immune system may be affected more initially than after days to weeks of opiate administration (see Bayer et al. below)}. This study was conducted on healthy volunteers. Subjects underwent continuous exposure to morphine for 36 hr. including a 24 hr. intravenous infusion in the hospital. Peripheral blood was drawn for immune function studies at five measurement times before, during, and after morphine exposure. Suppression of g-interferon stimulated natural killer cell cytotoxicity [NKCC] was observed at 2 and 24 hr. after the onset of intravenous morphine exposure. Suppression of NKCC persisted for 24 hr. after termination of morphine infusion in the higher dose study group; g-interferon-stimulated NKCC and antibody dependent cell cytotoxicity were also decreased after 24 hr. of morphine exposure. These results suggest that morphine administration, at doses within the range of analgesic use, can cause measurable suppression of some components of the human cellular immune system. The potential impact of this suppression on disease progression remains to be evaluated. Mark Yeager, Thomas A. Colacchio, Cecelia T. Yu, Laurie Hildebrandt, Alexandra L. Howell,

Julie Weiss, Paul M. Guyre.

Membrane Potential and Morphine Tolerance

Dr. William W. Fleming of West Virginia University has been investigating if (1) the state of partial depolarization of morphine-responsive S myenteric neurons is the result of altered function of the Na/K pump and (2) the adaptation of myenteric and brainstem neurons induced by chronic treatment with morphine is nonspecific and due to changes in resting membrane potential.

During the past year Dr. Fleming has shown that: (1) There is no decrease in the percent of S myenteric neurons which are hyperpolarized by morphine in tolerant vs placebo preparations. (2) Approximately 2/3 of tested S neurons were hyperpolarized by 0.1 µM morphine. (3) Only neurons which responded to morphine acutely demonstrated a lesser resting transmembrane potential in tolerant vs control preparations (a mean depolarization of 7.2 mV). (4) The acute hyperpolarizing effects of morphine 0.l µM, clonidine 0.3 µM, and 2-CADO (2-chloro-adenosine) 0.1 µM were equivalent (6-8 mV) on the same S neurons and not different between tolerant and placebo preparations. This is important because these concentrations produce 50-60% inhibition of the neurogenically induced twitch in control LM/MP but less than 10% in tolerant preparations. (5) The hyperpolarizing effects of morphine and clonidine are accompanied by reductions in input resistance while the hyperpolarizing effect of 2-CADO is not. And (6) effects of these agonists on input resistance do not differ between tolerant and placebo preparations. Preliminary experiments with cardiac glycosides are consistent with the S neurons of tolerant preparations having depressed electrogenic function of the Na/K pump.

It was concluded that: (1) The receptors for the three agonists are co-localized on S neurons, the motor neurons to the longitudinal muscle. (2) The transduction process for 2-CADO is different from that of morphine and clonidine. (3) Cross tolerance (subsensitivity) among the agonists is not a function of altered receptors or transduction processes. And (4) the hypothesis that the de polarized state of S neurons is responsible for tolerance in the LM/MP preparation is strongly supported.

In brainstem, the morphology and pharmacology of the guinea pig nucleus of the Tractus Solitarius (nTS) have been defined. The sensitivity of spontaneously firing nTS neurons to several agonists has been quantified and compared between brainstem slices from guinea pigs implanted seven days before with morphine pellets ("tolerant") and slices from placebo implanted guinea pigs. Sensitivity to the inhibitory actions of morphine, muscimol (GABAA-selective agonist) and 2-CADO was significantly reduced in the tolerant preparations. Sensitivity to the excitatory effects of potassium ion was increased. Thus, the working hypothesis that the adaptation of these neurons induced by chronic treatment with morphine will be nonspecific (i.e., not confined to opioids), just as in the LM/MP, has been confirmed.

Orphanin FQ: A Neuropeptide That Activates an Opioid Receptor-like Orphan Receptor

During the arduous pursuit of the molecular cloning of opioid receptors, several laboratories have identified an orphan receptor with a sequence similar to the mu, delta and kappa opioid receptors, yet incapable of high affinity binding of the known ligands.

Now NIDA grantee David Grandy and other investigators at the Vollum Institute in Oregon and Hoffman-La Roche in Switzerland have discovered the natural ligand for this novel receptor. This natural ligand, named orphanin FQ by Grandy and his coworkers, is a heptadecapeptide which shares the greatest sequence similarity with dynorphin A. It inhibited adenylate cyclase in transfected cells expressing the orphan receptor. After intracerebroventricular administration, orphanin FQ caused a decrease in locomotor activity in mice but did not induce analgesia in the hot-plate test. It produced hyperalgesia in the tail-flick assay. Future studies on orphanin FQ will likely enhance our understanding of pain mechanisms as well as tolerance and dependence associated with opioid drugs. Science, Vol. 270, p. 792, November 3, 1995. Dr. Lei Yu of Indiana University School of Medicine, recently reported that dynorphins are the endogenous ligands for the orphan receptor. JBC, Vol. 270, p. 22772, 1995.

Opiates and Pain Fibers

Pain is carried to the brain by two classes of fibers: A-delta and C fibers. A-delta fibers generally mediate acute sharp pain, whereas chronic aching pain is mediated by C fibers. Dr. David Yeomans (University of Illinois) has recently established a non-invasive method for exclusively activating either fiber class in rats. Dr. Yeomans has found that pain produced by C-fiber activation is mediated by substance P or NMDA receptors. Conversely, pain produced by A-delta fibers is mediated by the release of excitatory amino acids. Despite this pharmacological difference, both types

of fibers could be inhibited by endogenously released opioids. This research has important significance to pain control. Whereas opioids are effective on both acute and chronic pain, there are significant drawbacks of chronic opioid administration. The methods established by Dr. Yeomans will be valuable in the study of the pharmacological differences between acute and chronic pain, and perhaps will lead to improved treatments for chronic pain. These findings were presented at the 1995 Society for Neuroscience annual meeting (Dimethyl Sulfoxide Sensitizes A-delta and Desensitizes C-fiber Nociceptors, Soc. Neurosci Abs, 21: p. 649, 1995; Differential Pharmacology of Raphe Magnus Stimulation Produced Antinociception for Rat Foot Withdrawal Response Evoked by Different Rates of Radiant Heating, Soc. Neurosci Abs, 21: p. 1415, 1995) and are in press in the journal *Pain*.

Tolerance and Crosstolerance to the Suppressive Effects of Cocaine and Morphine on Lymphocyte Proliferation

The effects of acute or daily exposure to either cocaine or morphine on lymphocyte proliferative responses and NK cytolytic activity were determined. Two hours following the IV infusion of cocaine, blood lymphocyte proliferative responses were found to be suppressed by 75%. Cocaine had no effect on proliferative responses of thymic or splenic lymphocytes or cytolytic activity of splenic NK cells following acute or 5 day repetitive dosing. Similar to the effects of cocaine, morphine administration was also accompanied by a suppressed blood lymphocyte response, which was no longer apparent 8 days following repeated morphine injections. Animals that had received daily injections of either morphine or cocaine were also found to be resistant to the inhibitory effect of a single dose of morphine or cocaine respectively. These data suggest that repeated exposure to either morphine or cocaine results in the development of an apparent crosstolerant state to further suppression of blood lymphocyte proliferative responses by either drug. Barbara M. Bayer, Monica C. Hernandez and Xuan Z. Ding, Pharmacol Biochem Behav 52: pp. 227-34, 1995.

A Primate Model of Polydrug Abuse: Cocaine and Heroin Combination

NIDA grantees at the Alcohol and Drug Abuse Research Center at McLean Hospital have developed a primate model for studying cocaine-opiate combinations ("speedballs") using self-administration and drug discrimination procedures. This model should prove to be valuable in developing pharmacotherapies for concurrent cocaine and opiate abuse. A Primate Model of Polydrug Abuse: Cocaine and Heroin Combination, Mello et al., J. Pharmacol. Exp. Therap., 274: pp. 1325-1337, 1995.

Anabolic-androgenic Steroids and Brain Reward

Dr. Ann Clark and her associates have recently found that in rodents, two weeks of exposure to anabolic-androgenic steroid (AAS), methandrostenolone produced no significant changes in the rewarding properties of brain stimulation reward. On the other hand, their data also suggested that AAS may influence the sensitivity of brain reward systems as the rate-frequency curve-shift observed in response to a systemic dose of amphetamine was significantly greater in animals after 15 weeks on a mixture of commonly abused AAS compounds. Clark, AS, Lindenfeld, RC, and Gibbons, CH. Pharmacol Biochem and Behavior, in press.

A Simple Genetic Basis for a Complex Psychological Trait in Laboratory Mice

Anxiety, either pre-existing or drug induced, is often associated with chronic use and abuse of psychoactive drugs. Understanding the biological bases of anxiety may provide insight into the mechanisms underlying substance abuse. This philosophy guided a study carried out as part of a NIDA funded research Center (DeFries: Behavioral Genetic Studies of Drug Abuse Vulnerability) in the laboratory of NIDA Research Scientist Allan C. Collins. The study used the Quantitative Trait Locus (QTL) methodology to identify QTLs associated with emotionality in the mouse. The QTL methodology provides a first step towards identifying the genes that regulate emotionality or anxiety. Emotionality was inferred in mice by a covariation of behavioral measures that included open field activity, defecation in the open field activity on an elevated plus-maze and Y-maze activity. Quantitative measures of each of these behaviors were assessed in over 800 F2 crosses derived from two mouse lines that were selectively bred for differences in activity and defecation in an open field arena.

The mice were genotyped and a linkage analysis was performed. Three QTLs were identified, on mouse chromosomes 1, 12, and 15, that are common to the four behaviors that were measured. The results suggest that these loci are, at least in part, the genetic basis of emotionality. Reasons for expecting that the genetic basis of emotionality is similar in other species and that it may underlie the psychological trait of susceptibility to anxiety in humans is suggested by

the behavioral effects of anxiolytic drugs in rodents together with results of electrophysiological and lesion experiments. While the nature of these genes is unknown, the results suggest that they may influence emotional response to a wide variety of anxiogenic stimuli and may provide new approaches towards understanding the association between anxiety and psychoactive drug use. Jonathan Flint (Institute of Psychiatry, London, UK funded by Wellcome Trust), Robin Corley, John C. DeFries, David W. Fulker, Jeffrey A. Gray, Stacey Miller, Allan C. Collins (Funded by NIDA Center Grant to DeFries and K-Award to Collins) Science, 269: pp. 1432-1435, September 8, 1995.

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

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

Director's Report to the National Advisory Council on Drug Abuse
February, 1996

Research Findings

Behavioral Research

Increase the Cost of Drugs and Offer Alternative Activities

In a study that recently appeared in Experimental and Clinical Psychopharmacology (3, 1995), Warren Bickel and his colleagues at the University of Vermont reported important data showing how cigarette consumption and cigarette seeking behavior can be decreased by principles derived from behavioral economics. Cigarette smokers participated in a laboratory study in which work effort ("simulated employment") reduced cigarette consumption, as did the availability of recreational activities. The greatest reductions in both cigarette smoking and effort to obtain cigarettes were achieved when smoking cost was increased in combination with the presence of alternative recreational activities. This study points out yet again that both drug seeking and consumption is not intractable and can be reduced by interventions informed by models in the basic behavioral sciences.

Female Cigarette Dependence, Relative to Male Cigarette Dependence, May Be More Strongly Linked to Non-Nicotine Factors than to Nicotine Factors

Kenneth A. Perkins, University of Pittsburgh, has a review article in press, "Sex Differences in Nicotine vs Non Nicotine Reinforcement as Determinants of Tobacco Smoking," in Experimental and Clinical Psychopharmacology. Although cigarette smoking is declining in the U.S. population, the decline is slower for women than for men and by the year 2000 women smokers are predicted to outnumber men smokers. There is evidence that women are less successful at quitting smoking than men: they are less likely to initiate quitting, and when they do quit, they are more likely to relapse than men. Moreover, nicotine replacement via nicotine gum or the nicotine patch are less effective for females than males, despite equal compliance with regimen. Dr. Perkins considers whether these sex differences in smoking cessation reflect differences in smoking for nicotine reinforcement or reflect differences in non-nicotine factors, such as the sensory aspects of smoke inhalation, conditioned responses to smoke stimuli, and social reinforcement associated with smoking. Relative to men, smoking by women may be controlled less by nicotine and more by the non-nicotine factors. For example, although quitting smoking is more difficult for women than men, data indicate that women may have lower levels of dependence, i.e., they smoke fewer cigarettes per day, smoke brands with lower nicotine yields, are less likely to report deep inhalation, and have lower scores on self-report indices of nicotine dependence. Nevertheless, their withdrawal is often more severe than that of men, and they report less withdrawal relief from nicotine gum than men. Evidence also indicates that women are more responsive to non-nicotine smoking cues than are men.

Male-Female Differences in the Use of Nicotine Nasal Spray

Dr. Kenneth Perkins, University of Pittsburgh, compared the use of nicotine nasal spray (doses corrected for body weight) in male and female smokers during smoking cessation. Males used the nicotine spray twice as much as placebo, whereas, for women, use of the nicotine and placebo sprays were similar and were equivalent to the males' use of the placebo spray. This outcome is consistent with data from an earlier study by Dr. Perkins showing that preloads of nicotine nasal spray reduced smoking in women to a lesser degree than in men, and are consistent with the notion that women, relative to men, smoke less for nicotine reinforcement and more for non-nicotine factors (e.g.

sensory, social, conditioned). A possible treatment implication of this view is that for women, less emphasis should be placed on nicotine replacement therapy and more emphasis should be placed on therapy directed at identifying the non-nicotine aspects of smoking and reducing their control.

Nicotine Effects in Humans

Dr. Kenneth Perkins from the University of Pittsburgh has recently reported some significant effects related to acute nicotine tolerance and individual differences in response to nicotine. Smokers pretreated with nicotine and then given nicotine 30, 60 or 120 min. later became tolerant to the additional nicotine's mood, euphoric and cardiovascular effects. This "acute" tolerance dissipated over time, however, for other subjective measures such as arousal. These data suggest that only some of nicotine's many effects diminish between smoking episodes experienced by smokers. Psychopharmacology, 118: pp. 164-170, 1995.

In studies of sex differences, males and females do not differ in their ability to distinguish between a placebo and a nicotine spray if they have been taught to make these discriminations earlier. Without such pre-training, however, men are better able to distinguish between lower doses of nicotine and placebo than women. Moreover, women find the effects of tobacco smoking more pleasurable than nicotine spray while men find their effects equally pleasurable. Thus, women may be more sensitive to other aspects of smoking than the actual nicotine effects (such as appetite suppression; also see above). These findings have implications for the use of nicotine replacement therapy for smoking cessation in women. Dr. Perkins also has shown that the subjective state prior to nicotine administration can alter the mood and euphoric effects of nicotine. Smokers were exposed to a high-challenge (high stress) task vs low-challenge task (low stress). Smoking reduced stress during the high-challenge task, but not the low-challenge task. These and other results suggest that nicotine's subjective effects are related to the person's presmoking state, and that nicotine may be reinforcing because it normalizes mood rather than has a single immutable mood-altering effect. A review of this research is presented in Behavior Genetics, 25: pp. 119-131, 1995.

Effects of Naltrexone Pretreatment on the Subjective and Performance Effects of Ethanol in Social Drinkers

P. Doty and H. de Wit, Behavioral Pharmacology, 6: pp. 386-394, 1995, report that naltrexone (25 or 50 mg) produces few subjective effects and does not impair psychomotor performance or verbal recall performance in social drinkers. Importantly, naltrexone pretreatment did not alter the subjective or performance effects of a dose of ethanol (0.5 g/kg) chosen to produce a moderate level of subjective effects in social drinkers. These data are interesting because in an alcoholic population, naltrexone has maintained abstinence, decreased craving, and prevented relapse. To better understand the factors influencing naltrexone/ethanol interactions, Dr. de Wit suggests that future research should explore variables including the study population (differences in baseline alcohol use or genetics), duration of naltrexone treatment (acute vs chronic), and ethanol dose studied.

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

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

Director's Report to the National Advisory Council on Drug Abuse
February, 1996

Research Findings

Clinical and Services Research

Improved Regional Cerebral Blood Flow in Chronic Cocaine Polydrug Users Treated with Buprenorphine

Since chronic cocaine and polydrug abuse has been associated with regional abnormalities in cerebral perfusion which could be partially reversible with buprenorphine (Holman et al., J Nucl Med, 34: pp. 723-727, 1993), the authors investigated separation of cerebral perfusion effects of abstinence from those of buprenorphine treatment. Fifteen cocaine and heroin dependent men (all part of an inpatient drug abuse treatment research program) were studied with 99mTC-hexamethylpropyleneamine oxime (HMPAO) brain SPECT. The subjects were randomly assigned after detoxification to receive placebo or either 6 or 12 mg daily buprenorphine treatment. SPECT studies were performed at baseline, after maximum dosage was reached, and after tapering of the drug. The number and location of perfusion defects were counted. Results showed that subjects receiving buprenorphine had a significant reduction in the number of defects between baseline and maximum buprenorphine dose as compared with placebo (4+5.4 decrease versus 4.8+4.7 increase, p=0.006). The differences were dose-related. However, improvement was temporary, with return to baseline after tapering off. Thus, data suggest that buprenorphine treatment, and not abstinence from drug use alone, leads to temporary improvement in regional cerebral perfusion abnormalities in chronic cocaine- and heroin-dependent men. Jonathan M. Levin, Jack Mendelson, B. Leonard Holman, Siew K. Teoh, Basem Garada, Richard B. Schwartz, and Nancy Mello. J. Nucl Med, 36(7), pp. 1211-1215, 1995.

The Residual Cognitive Effects of Heavy Marijuana Use in College Students.

According to the authors, heavy use of marijuana is associated with cognitive impairment in college undergraduate students. They enrolled two groups of students: 65 "heavy users" (38M,27F), who had smoked marijuana a median of 29 days in the past 30 days (range 22-30), and who also displayed cannabinoids in their urine; and 64 "light users" (31M,33F) who had smoked a median of 1 day in the last 30 days (range 0-9) and who displayed no urinary cannabinoids. All the subjects were assessed by several neuropsychological tests when they were abstinent from marijuana and other drug use for at least 19 hours before testing. The outcome measures were: general intellectual functioning, abstraction ability, sustained attention, verbal fluency, and ability to learn and recall new verbal and visuospatial information. Heavy users displayed significantly greater impairment than light users on attention/executive functions, as evidenced by greater preservations on card sorting and reduced learning of word lists. These differences remained after controlling for potential confounding variables, such as estimated levels of pre-morbid cognitive functioning, and for use of alcohol and other substances in the two groups. Whether this cognitive impairment is due to a residue of drug in the brain, a withdrawal effect from the drug or a frank neurotoxic effect of the drug, is not clear. Harrison G. Pope, Deborah Yurgelun-Todd. JAMA, in press. On the other hand, Block and Ghoneim [Psychopharmacology, 110: pp. 21-228, 1993] have also reported similar findings of impairment of cognition in adult marijuana abusers, and Fried reported impairment of attention/executive functioning in 9-12 year old children who were exposed prenatally to marijuana. Arch Toxicology, in press.

Subjective and Cardiovascular Responses to Nicotine Combined with Alcohol in Male and Female Smokers

The cardiovascular and subjective effects of nicotine and alcohol in combination have rarely been examined. Thus, the investigators enrolled 18 smokers (9 males, 9 females) [smoking rate of 17.7+0.5 cigarettes/day; 5.2+0.6 years] who were also moderate alcohol drinkers (15 drinks [50-250 g alcohol] per week). The subjects were given an acute administration of nicotine (20 ug/kg per presentation) or placebo by measured-dose nasal spray every 30 min. for 2 hours following consumption of diet tonic water with or without alcohol (0.5 g/kg). Subjective (visual analog scale, Profile of Mood States, Addiction Research Center Inventory) and cardiovascular (heart rate, systolic and diastolic blood pressure) were assessed. Nicotine increased head rush, dizziness, and most stimulant effects (i.e., jitteriness, tension, and arousal and decreased fatigue and relaxed state), while alcohol increased perceived intoxication, head rush, dizziness, and jitteriness, with no other stimulant effects. Nicotine and alcohol generally produced additive subjective and cardiovascular effects when consumed together, although nicotine attenuated sedating and intoxicating effects of alcohol alone. Further, there were several interaction effects on subjective measures involving gender. Nicotine plus alcohol tended to attenuate some subjective effects due to one drug or the other alone in men but enhanced the effects of either alone in women. These findings indicate that nicotine and alcohol generally have additive subjective and cardiovascular effects, but that men and women differentially respond on some subjective measures to the combination of alcohol and nicotine. Kenneth A. Perkins, J.E. Sexton, A. DiMarco, J.E. Grobe, A. Scierka, and R.L. Stiller. Psychopharmacology, 119: pp.205-212, 1995.

Acute Tolerance to Nicotine in Smokers: Lack of Dissipation within 2 Hours

In order to understand the development and dissipation of acute tolerance to nicotine and explain the temporal patterns of nicotine self-administration in smokers, the investigators examined the time course of dissipation of acute tolerance to nicotine (20 ug/kg by measured-dose nasal spray) in 16 smokers (8 males, 8 females). The smokers participated in four sessions differing on pretreatment exposure or time interval prior to nicotine challenge: placebo 30 min. before, or nicotine 30, 60, or 120 min. before challenge. Subjective, cardiovascular, thermal pain detection, and behavioral performance were measured. Significant acute tolerance was shown on most subjective measures and for heart rate. In contrast, nicotine pretreatment resulted in acute sensitization of finger temperature (vasoconstriction) response, which dissipated with lengthening interval. Acute tolerance did not develop on thermal detection and behavioral performance measures. These findings demonstrate that acute tolerance develops quickly to some subjective and cardiovascular effects of nicotine. However, acute tolerance to most effects did not dissipate over 2 hours, suggesting that, following acute tolerance development during initial exposure, most smokers generally obtain similar magnitude of effects from each subsequent nicotine exposure [i.e., cigarettes smoked later in the day]. Kenneth A. Perkins, J.E. J.E. Grobe, Shari L. Mitchell, Jennifer Goettler, Anthony Caggiulla, Richard Stiller, and Annette Scierka. Psychopharmacology, 118: pp.164-170, 1995.

Drive to Smoke and Dopamine Blockade

Dr. Joseph McEvoy and colleagues from Duke University Medical Center conducted a study in which ten patients with schizophrenia participated in 120-minute free-smoking sessions when actively psychotic and free of antipsychotic medications, and again after the initiation of haloperidol, a classical antipsychotic drug. The study showed that schizophrenic patients smoke more when treated with haloperidol than during a medication-free state. Preliminary evidence exists that shows that smoking decreases in patients switched from haloperidol to the atypical antipsychotic clozapine. Further work in a larger cohort with a more longitudinal study design is now underway. Haloperidol Increases Smoking in Patients with Schizophrenia, Psychopharmacology, 1995; and Clozapine Decreases Smoking in Patients with Chronic Schizophrenia, Society of Biological Psychiatry, 1995.

Coping with Depression in Smoking Cessation

Dr. Richard A. Brown and colleagues from Butler Hospital, employing a randomized, two-group designed study, compared standard smoking cessation treatment and standard smoking cessation treatment plus cognitive-behavioral treatment for depression in smokers with a history of major depressive disorder. Preliminary results suggest that adding cognitive-behavioral treatment for depression to standard smoking cessation treatment for smokers with a history of MDD results in significant posttreatment effects on smoking outcomes. However, these effects have not been maintained at longer term follow-up. It appears that a higher potency of treatment intended to address depressive symptoms and negative mood may be necessary for a full treatment response in this at risk group of smokers.

Neurobehavioral Functioning Among Cocaine Abusers

Dr. Tony L. Strickland, of the Charles R. Drew University of Medicine & Science, presented preliminary findings from his ongoing NIDA-funded research study on neurobehavioral functioning among cocaine abusers of different ethnic backgrounds at the National Academy of Neuropsychology Fifteenth Annual Meeting held in San Francisco, CA on November 1-3, 1995. Ninety-seven subjects (32 black females, 16 black females, 26 white females, 13 white males) have been evaluated in accordance with the study protocol, which includes measures of prior drug utilization, psychosocial and neuropsychological functioning, and brain structure and blood flow. Preliminary analyses revealed significant neuropsychological impairment on measures of memory, learning, and attention, but unimpaired functions on measures of language and visuoperceptual functioning. Neuroimaging (MRI) showed no abnormalities except in one subject with a small lesion in the basal ganglia. MRS data showed no significant differences between male and female cocaine users in both the gray and white matter regions.

Maternal Psychological Distress and Development of Cocaine-Exposed Infants

New evidence from NIDA-supported research at Case Western Reserve University supports the importance of examining both direct toxic effects and indirect effects (e.g., parental functioning) when studying the influence of maternal drug use during pregnancy on infant development. In this project, cocaine-exposed and non-exposed infants and their mothers are being followed longitudinally from birth. Postpartum psychological distress (measured by the Brief Symptom Inventory) was higher in the cocaine-using women. Using hierarchical multiple regression analysis to assess the relative effects of gestational age, psychological distress, and maternal cocaine use, both cocaine exposure and maternal postpartum psychological distress had independent negative effects on infant cognitive outcomes (Bayley Scales) in the second year of life. Prenatal cocaine exposure also marginally predicted motor outcome on the Bayley Scales, whereas maternal psychological distress was unrelated to infant motor outcome. This project is continuing its longitudinal examination of maternal psychological factors, as well as maternal substance use, on the outcomes of the offspring. Singer, L., Arendt, R., Minnes, S., et al. Increased Psychological Distress in Post-Partum, Cocaine-Using Mothers. Journal of Substance Abuse, 7: pp.165-174, 1995; Singer, L., Farkas, K., Arendt, et al. Maternal Cocaine Use and Psychological Distress Affect Infant Development Outcome. Pediatric Research, 34: p. 272A, 1995.

Behavior Therapy for Substance Abusers

Eighty two adult and older adolescent (17%) subjects were enrolled in a study designed to assess the efficacy of a behavioral approach (i.e., combined elements of urge control training, behavioral contracting, and imaginal rehearsal of consequences of drug use) through a randomized comparison with a group discussions/peer support condition that focused on the expression of thoughts and feelings associated with drug use. Results suggest the behavioral condition is more effective in reducing drug use 12 months after entry into treatment, and more effective across gender, age, educational level, and type of drug used (e.g., opiate; cocaine; marijuana). Greater improvement was also noted in subjects enrolled in the behavioral intervention on measures of school/employment attendance, family relationships, and number of contacts with the police. Azrin NH, McMahon PT, Donohue B, Besalel VA, Lapinski KJ. Behav. Res. Ther. 32(8): pp. 857-866, 1994.

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

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

Director's Report to the National Advisory Council on Drug Abuse
February, 1996

Research Findings

AIDS Research

Maternal Antibodies in HIV-Uninfected Infants

Savita Pahwa and associates discovered the presence of human immunodeficiency virus (HIV)-specific maternal antibodies bound to the peripheral blood mononuclear cells (PBMCs) of 39 uninfected infants born to HIV-infected women. Such antibodies were not observed on PBMCs of 13 infants in whom maternal-child transmission of HIV had occurred. These results suggest that PBMC-bound maternal antibodies might have a protective role in the transmission of HIV from mothers to infants. Pediatric Research 38: pp. 384-389, 1995.

Needle and Syringe Acquisition and Use among IDUs

A study of the acquisition and use of needles and syringes by IDUs was undertaken among a cohort of active injectors in Baltimore, MD prior to the opening of a needle exchange program. Among both HIV positives and negatives, less than one quarter (22%) had participated in a detoxification or methadone treatment program in the prior 6 months. The majority of respondents reported injecting at least once per day (56%). Usual sources of needles and syringes reported by 466 IDUs (95% Black, 83% male) included: street dealers (50%), pharmacies (30%), diabetics (16%), friends/neighbors (2.2%), and shooting galleries (2%). Twenty-three percent reported trading drugs and 5% reported trading sex for needles and syringes. Needle syringe reuse was common (median 3 times). Approximately 88% reported that they would use a needle exchange if it were available. These data will be used to assess the impact of the Baltimore City Health Department needle exchange program now in operation. Gleghorn, A., Jones, T.S., Doherty, M.C., Celentano, D.C., & Vlahov, D. Acquisition and Use of Needles and Syringes by Injecting Drug Users in Baltimore, Maryland. JAIDS, 10: pp. 97-103, 1995.

Maintaining Low HIV Seroprevalence in Populations of Injecting Drug Users

Don Des Jarlais, Holly Hagan, Samuel Friedman, and their associates developed case histories of five cities in which HIV has been introduced into a heterosexual IDU community but where HIV seroprevalence has remained low and stable. The case studies were conducted to identify common elements of prevention in the communities that could serve as models for other communities with similar HIV/IDU profiles. Three common prevention components were identified (beginning early, community outreach, and access to sterile injection equipment). The authors conclude that, in low seroprevalence areas, it appears possible to severely limit transmission of HIV among populations of IDUs, despite continuing risk behavior among a substantial proportion of the population. They recommend the implementation of the three prevention elements wherever populations of IDUs are at risk for rapid spread of HIV. JAMA, 274: pp. 1226-1231, 1995.

Risk Factors for HIV among Out-of-Treatment IDU in High and Low Seroprevalence Cities

NIDA grantees of the National AIDS Research Consortium, including Samuel R. Friedman, Benny Jose, Sherry Deren, Don C. Des Jarlais, and Alan Neaigus, report findings from their research to determine significant predictors of HIV seroconversion in 10 low seroprevalence and five high seroprevalence cities in the U.S. The Consortium interviewed

and collected serum samples from 6,882 IDU in the 15 U.S. cities from 1988 to 1991. Significant predictors of seroconversion in the low seroprevalence cities were: not being in treatment, injecting in outdoor settings or abandoned buildings, using crack cocaine weekly or more frequently, engaging in woman-to-woman sex, being of other than Latino race/ethnicity, and city seroprevalence. Predictors in high seroprevalence cities were injecting with potentially infected syringes, not being in drug treatment, and having a sex partner who injected drugs. The authors suggest that HIV may be concentrated in sociobehavioral pockets of infection in low seroprevalence cities. For reducing HIV transmission in these cities, they recommend localized monitoring to detect specific emerging sociobehavioral pockets of infection and quick implementation of targeted interventions. For high seroprevalence cities, they recommend more emphasis on locality-wide outreach and syringe exchange.

For both types of cities, the authors prescribe broad expansion of drug treatment programs. Am J Epidemiol., 42: pp. 864-874, 1995.

HIV Incidence Among New Haven Needle Exchange Participants: Updated Estimates from Syringe Tracking and Testing Data

Drs. Edward Kaplan and Robert Heimer of Yale University provide updated estimates of the rate of new HIV infections among participants in New Haven's legal needle exchange program from syringe tracking and testing data. These researchers had previously reported that, based on data collected from 1990 to 1992, the maximum likelihood incidence rate was zero with a 95% confidence interval of 0-10.2 new infections per 100 drug injectors per year. Expanding this data set through 1993, the same statistical methods yield a maximum likelihood estimate of 1.63 new infections per 100 drug injectors with a 95% confidence interval of 0-7.2. Given these data, the authors conclude that the null hypotheses of no new infections cannot be rejected, lending support to the efficacy of the New Haven needle exchange program. J AIDS and Human Retrovirology. 10: pp. 175-176, 1995.

Networks of IDUs

Carl Latkin, Wallace Mandell, David Vlahov, and others at Johns Hopkins University examined social contextual factors antecedent to needle sharing in a sample of inner-city drug users in Baltimore, Maryland. Drug users' social context was assessed through an analysis of personal networks. Each of the 330 individuals participating in the research were interviewed twice at 5 months apart. The authors report that higher total personal network density and larger drug network size were positively associated with reports of sharing needles and that attending shooting galleries was positively associated with size of positive feedback network and negatively associated with size of material aid network. The data suggest that needle sharing and injecting in shooting galleries are influenced by ecological and resource factors. The findings also demonstrate the potential utility of network-oriented strategies for reducing needle sharing among IDUs. Social Networks, 17: pp. 219-228, 1995.

Risk Factors for HIV-1 Seroconversion Among Injection Drug Users (IDUs)

Dale Chitwood, Bryan Page, Clyde McCoy, and others at the University of Miami School of Medicine conducted a case-control study in Miami to identify risk factors associated with HIV seroconversion among IDUs. Using data collected from two longitudinal cohorts of IDUs, the authors identified the sharing of injection equipment to be the single best independent risk factor for seroconversion in both groups. A marginal risk factor was the presence of a sexually transmitted disease during the time of the study. The authors conclude that both an injection and a sexual component play a role in HIV seroconversion among IDUs, although the injection component appears to be much stronger. Am J Public Health, 85: pp. 1538-1542, 1995.

Outcomes of a Risk-Reduction Intervention with High-Risk Populations: The Harlem AIDS Project

Sherry Deren, Rees Davis, Mark Beardsley, Stephanie Tortu, and Michael Clatts of the National Development and Research Institute compared outcomes of risk reduction interventions with high risk populations in Harlem, N.Y. About 1,770 IDUs and their sex partners were randomly assigned to two interventions and assessed at repeated intervals. IDUs who participated in either of the interventions or in the non-intervention ("control") were found to have significant reductions in risk behaviors. However, the authors describe the risk characteristics of persons lost to follow up (i.e., more likely to be homeless, to be non-Latino, and to use shooting galleries) and point out the importance of assessing outcomes for all types of participants, including those lost to follow up. They also discuss the

need to distinguish the impact of interventions from other explanations for behavior change. AIDS Education and Prevention,7(5): pp. 379-390, 1995.

Use of the Health Belief Model to Predict HIV Needle Risk Practices

Russel Falck, Harvey Siegal, Jichuan Wang, and Robert Carlson of the Wright State University School of Medicine examined the usefulness of specific dimensions of the Health Belief Model (HBM) for predicting HIV needle risk practices among 118 active IDUs, many of whom also used crack cocaine. Two health beliefs (self-efficacy and perceived susceptibility) were significantly related to safer injection practices. Other predictors of safer injection behavior were being African-American and injection frequency. The authors conclude that the Health Belief Model does have a substantive role to play in risk reduction programs that target IDUs. AIDS Education and Prevention, 7(6): pp. 523-533, 1995.

Reliability of Self-Reported HIV Risk Behaviors of Drug Users

Richard Needle and Helen Cesari of NIDA, in collaboration with Barry Brown and grantees in the NIDA-sponsored Cooperative Agreement for AIDS Community-Based Outreach and Intervention Research Program, examined the test-retest reliability of NIDA's Risk Behavior Assessment (RBA) questionnaire by analyzing reported HIV risk behaviors among drug users. The RBA, a structured-interview questionnaire, was administered twice to 196 drug users in five cities over a 48-hour period. The findings indicated that respondents consistently self-report drug use, injection practices, and sexual behaviors. Discrepant reports do not appear to reflect systematic decreases or increases in self-report. Rather, unreliability was found to be associated with poorly worded questions and respondent characteristics. The authors discuss the implications of measurement error for estimating risks, understanding relationships between behavior and HIV transmission, and interpreting change after interventions. They have since revised the low reliability items in the RBA and are currently examining whether the revisions result in improved reliability. Psychology of Addictive Behaviors, 9(4): pp. 242-250, 1995.

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

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

Director's Report to the National Advisory Council on Drug Abuse
February, 1996

Research Findings

Epidemiology, Etiology and Prevention Research

Increased Smoking and Drug Use Among Students

Presenting the findings of the **1995 Monitoring the Future (MTF) Study**, Drs. Lloyd Johnston, Patrick O'Malley, and Jerald Bachman of the University of Michigan reported that between 1994 and 1995, use of cigarettes and many illicit drugs increased among students in all three grades surveyed. In addition, fewer students expressed negative perceptions of drug use. In most cases, these changes continued recent trends that began in the early 1990's and reversed a decade or more of decreases in drug use. The 1995 MTF Survey was the 21st annual survey of seniors and the fifth survey to include 8th and 10th graders. All changes noted below are statistically significant.

Cigarette Use

- Between 1994 and 1995, past month (30 day) cigarette use increased from 25.4 to 27.9 percent among 10th graders and from 31.2 to 33.5 percent among seniors. Similarly, daily smoking increased from 14.6 to 16.3 percent for 10th graders and from 19.4 to 21.6 percent for seniors.
- Since 1991, past month smoking has increased from 14.4 to 19.1 percent for 8th graders, 20.8 to 27.9 percent for 10th graders, and 28.3 to 33.5 percent for 12th graders.
- Although African American students continue to have the lowest rates of smoking, rates are going up for students in all racial/ethnic groups. Current cigarette use increased from 1992 to 1995 among white and black students in all three grades and among white, black, and Hispanic 8th graders.

Illicit Drug Use

- Use of **marijuana/hashish** continued to climb. Between 1994 and 1995, lifetime and past year marijuana use increased among 8th, 10th, and 12th graders, and past month use increased among 8th and 12th graders. This was the third consecutive increase in lifetime and past year marijuana use among 10th and 12th graders and the fourth for 8th graders. Among seniors, marijuana use in 1995 was the highest since 1989 for lifetime use, 1987 for past year use, and 1986 for past month use. In addition, daily marijuana use, an index of very high-risk use, increased for 10th and 12th graders.
- Driven in large part by the rise in marijuana, lifetime, past year, and past month use of **any illicit drug** increased among 8th and 10th graders. Past year use of any illicit drug increased among seniors.
- Past year use of **hallucinogens**, including LSD, increased among 8th, 10th, and 12th graders between 1994 and 1995, and past month use of these drugs increased for 10th and 12th graders.
- Past month use of **cocaine in any form** increased for 10th graders; this increase was primarily due to **crack**, which showed increases in lifetime, past year, and past month use among 10th graders.
- **Heroin** use in the lifetime, past year, and past month increased among seniors, and past month heroin use increased for 10th graders. For seniors, lifetime heroin use was at 1.2 percent in 1994 and at 1.6 percent in 1995. These increases appear mainly to reflect use of heroin in noninjectable forms.

- Use of **stimulants** increased among 10th graders for all three levels of recency of use.

Perceived Harmfulness and Availability

- The perceived risk of drug use continued to decrease. The percentage of 8th, 10th, and 12th graders reporting "great risk" in trying marijuana once or twice or in smoking the drug occasionally decreased. Among seniors, the percent of seniors reporting "great risk" in regular marijuana use has decreased steadily from 78.6 percent in 1991 to 60.8 percent in 1995.
- The percent reporting "great risk" in trying crack or cocaine powder or in using these drugs occasionally decreased among 8th and 10th graders.
- The perceived risk of smoking a pack or more of cigarettes per day decreased among 10th graders.
- The percentage reporting that marijuana was "fairly easy" or "very easy" to get increased among 8th, 10th, and 12th graders. The perceived availability of LSD increased for 8th and 10th graders.

Alcohol Use

- Alcohol use continued at unacceptably high levels. Notably, however, daily drinking increased among 12th graders, and more 10th graders reported having "been drunk" daily in the past month.

Community Epidemiology Work Group (CEWG)

The latest CEWG findings were released at the biannual meeting which was held in Honolulu, Hawaii on December 5-8, 1995. 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.

Highlights from findings from the most recent CEWG meeting include:

- **Cocaine** - Crack cocaine continues to dominate as the most serious drug of abuse in most areas of the country. Indicator data show that the epidemic may be leveling off in many urban areas and rebounding in others. Field reports from some areas, such as Atlanta, show increases in rural areas. Most indicators suggest an aging population of users who increasingly are suffering from health related consequences. Involvement in cocaine among youth appear to be limited largely to sales and distribution, often as part of gangs. Minneapolis/St. Paul may be a possibly emerging exception: some indicator data suggest growing numbers of new, younger cocaine users.
- **Heroin** - Health and law enforcement indicator data now confirm previous field reports of three heroin-using cohorts: a small, but growing number of young relatively recent initiates (particularly in Chicago, Detroit, Minneapolis/St. Paul, Newark, Phoenix, San Francisco, Seattle, St. Louis, and Texas); crack users who are starting to combine their crack with heroin; and a larger population of aging addicts who are switching to intranasal use and, in some cases, to smoking. An increase in smoking heroin is reported in Atlanta, Chicago, Los Angeles and San Francisco. The general trend appears to be a continued shift from injection to intranasal use in the East and parts of the Midwest, where lower priced, higher quality heroin remains readily available. In Atlanta and Philadelphia, however, some relatively new heroin users have begun shifting from intranasal use to injection. There is growing concern that a similar change in route of administration may occur in other areas with recent initiates as they no longer get the desired effect via snorting or smoking.
- **Marijuana** - Continuing last year's upward trend, indicator data and field reports show escalating marijuana use, especially by adolescents, across the Nation. Use of "blunts" (gutted cigars refilled with marijuana) continues to increase and increasingly are being used in combination with other drugs. In some cities, they are combined with cocaine ("primos"), crack ("woolies"), or PCP. There are also reports that marijuana is increasingly being sold by crack dealers, a change from past street trafficking trends.
- **Stimulants** - There has been a recent shift from small-scale domestic manufacture and trafficking of methamphetamine to large-scale Mexican operations. Availability, purity, and use continue to increase in mainland States where it has been a longstanding problem: California (especially San Diego), Texas, and Arizona. Other

areas including Denver, Minneapolis/St. Paul, and Miami also report increases in indicators of methamphetamine use. There are reports that new distribution routes for methamphetamine trafficking may follow those for cocaine and heroin, potentially introducing methamphetamine to areas where its prevalence is currently low. New user populations, such as some Native Americans in Arizona, are beginning to inject for the first time and the drug is increasingly involved in violent behavior, including child abuse and homicide. In addition, smokeable methamphetamine (ice) continues as one of the most serious substance abuse problems in Hawaii and has spread to a number of Pacific Island nations, such as Palau, Guam, the Commonwealth of the Northern Marianas and Papua New Guinea. Abuse is also prevalent in Southeast Asia, especially Thailand and the Philippines.

Methylphenidate (Ritalin, or "west coast") is commonly abused in Chicago (sometimes as a "speedball," with heroin or with heroin and cocaine), especially by African-American stimulant users. There also has been a reported increase among young users in Phoenix. It is also available in Texas and Michigan. In the latter, there are reports of theft of the drug from school clinics by adolescents or buying it from classmates who take it for attention deficit disorder.

The use and manufacture of methcathinone ("cat", "goob"), first reported in Michigan in 1990, has spread to other midwestern and western States, including Wisconsin and, more recently, Minnesota. Production of this ephedrine-based stimulant is becoming increasingly clandestine in the Michigan Upper Peninsula.

- **Flunitrazepam** (Rohypnol) - Abuse continues its recent spread across various parts of the country. It is increasingly reported by adolescent and young adult treatment admissions, especially in Florida and Texas. The drug is now involved in Drug Enforcement Administration (DEA) prosecutions in 25 States. Populations of users include college students, heroin and cocaine users, gang members, and polysubstance abusers in methadone treatment clinics. The drug is reported to be used as an alcohol (especially beer) enhancer. Its disinhibitive effects often lead to high-risk sexual activity as well as date rape, drag racing, and other destructive behavior. Miami has successfully included flunitrazepam in its DUI testing program.
- **Hallucinogens** - After a generally declining trend since 1988, indicators of phencyclidine (PCP) use appear to be rebounding in several cities, particularly Washington, DC. In some areas, such as Chicago, Miami, and Texas, PCP is increasingly used with marijuana, often in blunts. In addition, a resurgence in LSD availability is reported in several areas, particularly Atlanta and San Francisco. Decreased LSD potency and changing motivations are resulting in new patterns of abuse by youth.

Maternal Drug Use, Personality, Child-Rearing Practices, and Toddlers' Sadness

Dr. Judith Brook of Mount Sinai School of Medicine investigated the influence of maternal drug use, personality attributes, and child-rearing on 2-year-olds' sadness. The sample consisted of 62 girls and 53 boys and their mothers. A pattern of poor emotional control, difficult interpersonal relations, and poor intrapsychic functioning on the part of the mothers contributed to the children's sadness. Close mother-child attachments and low use of power-assertive discipline methods on the children insulated the children from sadness. Results of hierarchical regression analyses showed that the maternal-child relationship has a direct effect on the children's sadness and also serves as a mediator for the effect of the mothers' personalities on the children. Maternal intrapsychic harmony enhanced low alcohol and drug use leading to the least sadness in the children. Brook, JS & Tseng, LJ. Maternal Drug Use, Personality, Child-Rearing Practices, and Toddlers' Sadness. Psychological Reports, 76: pp. 912-914, 1995.

Cognitive Capacity of Female Adolescent Substance Abusers

In a study at the Center for Education and Drug Abuse Research (CEDAR), 106 female adolescents who qualified for a DSM-III-R diagnosis of psychoactive substance abuse disorder were compared to 74 normal controls on a battery of cognitive, intellectual, and achievement tests. The substance abuse group was found to perform deficiently on tests requiring language skills, sustained attention, and perceptual efficiently, and to score lower than controls on standardized tests of intelligence and academic achievement. While it is not known whether the differences in cognitive capacity preceded or followed onset of substance abuse, the investigators report that no dose-response-type relationship was observed, suggesting preexisting cognitive deficits. The results suggest that the impulsivity frequently reported in substance abusers has a cognitive component and may partially reflect the effects of impaired linguistic ability. Tarter RE, Mezzich AC, Hsieh YC, & Parks, SM. Cognitive Capacity in Female Adolescent Substance Abusers. Drug and Alcohol Dependence, 39: pp. 15-21, 1995.

Coping Capacity of Female Adolescent Substance Abusers

A related CEDAR study compared coping capacity among the same population as the above described study--female adolescents who qualified for a DSM-III-R diagnosis of psychoactive substance abuse disorder (n=133)--with that of depressed (n=34), conduct disordered (n=23) and normal control (n=113) female adolescents. Depressed and conduct disordered subjects excluded those who met the criteria for substance abuse disorder. Substance abusers were found to score lower on coping measures, assessed by the Constructive Thinking Inventory (Epstein & Meier, 1989), than did normal controls, but depressed and conduct disordered subjects showed patterns of deficient coping indistinguishable from those of substance abusers. Age at onset of substance use, interval between age of first use and age of diagnosis of abuse, and severity of substance use involvement did not correlate with coping capacity. These results suggest that the association between deficient coping and substance abuse is not as simple as previously thought. Deficient coping does not appear to be related specifically to drug abuse but rather, when present, to be concomitant to comorbid psychopathology among females who have substance abuse disorder. Mezzich AC, Tarter RE, Kirisci, L, Hsieh, YC, & Grimm, M. Coping Capacity in Female Adolescent Substance Abusers. Addictive Behaviors, 20: pp. 181-187, 1995.

School Achievement and Dropout Status Among Anglo and Indian Youth

This prevention research study assessed data from an NIAAA project on Indiana dropouts and data from a NIDA sponsored project on Anglo dropouts. The analysis looked at both females and males and showed that problems with teachers and problems with language skills increased the chances of becoming a dropout for both Anglos and Indians. Indian cultural identification by itself, did not predict success or failure, but the combination of Indian and Anglo cultural identification (biculturalism) was related to school success. Indian students who reported high levels of use of a tribal language in childhood were more likely to be dropouts. Those with an Anglo identification and high levels of use of English were more likely to succeed. James, K, Chavez E., Beauvais, F., Edwards, R., Oetting, G. School Achievement and Dropout Among Anglo and Indian Females and Males: A Comparative Examination. American Indian Culture and Research Journal, 19(3), 1995.

Links Among Violence, Drug Use, and Gang Involvement

Ruth Edwards of the Tri-Ethnic Prevention Research Center presents data from three types of Western communities (rural, small urban, and a large urban) to illustrate that youth who use drugs are more likely to perpetrate violence as well as to be victims of violence. A link between gang involvement and higher levels of both drug use and violence also appears in both the rural and urban communities. In S.M. Blaser, J. Blaser, and K. Pantoja (Eds.), Perspectives on Violence and Substance Use in Rural America, Oakbrook, IL: North Central Regional Educational Laboratory.

Preventive Interventions for High-Risk Youth: The Adolescent Transitions Program

Drs. Dishion, Andrews, Kavanagh and Soberman present findings from a controlled test of a drug abuse prevention intervention focused upon at-risk youth and their families. The program called the Adolescent Transitions Program (ATP) provides a variety of intervention and assessment resources to prevent problem behavior throughout the developmental stages of childhood and adolescence. The basic intervention components offer protective skills to parents and teens for problem behavior reduction and prevention across contexts in early adolescence. The chapter imparts theory, practical intervention tools and suggests future directions for the treatment and prevention of behavior problems in adolescence. In B. McMahon and R. D. Peters (Eds.), Childhood Disorders, Substance Abuse and Delinquency: Prevention and Early Intervention Approaches, Newbury, CA: Sage, 1995.

Continuation High Schools: Youth At-risk for Drug Abuse

A prevention research study by Dr. Steven Y. Sussman and colleagues finds that students at alternative high schools may be at substantial risk for drug abuse. In California, youth remain at the same elementary and junior high school, but when reaching high school age, those youth who are unable to remain in the comprehensive (i.e. regular) school system for emotional, behavioral, or other functional reasons, including substance use, are transferred to a continuation high school. Continuation schools require continued (part-time) education for all California youth until reaching 18 years of age. A total of 144 students and 96 staff were interviewed from 20 continuation high schools. Continuation high school students reported use rates three to five times higher than comprehensive high school youth. However, only 20% of the students reported that they received any drug abuse prevention programming. The researchers conclude that continuation high schools students are at risk for substance abuse and prevention

programming is sorely needed.

Driving Under the Influence

The frequency and success rate of different types of informal drunk-driving interventions were examined. From students who completed a drinking and driving questionnaire (N=388), 303 subjects (78%) who reported having been in a DUI situation within the last year and 206 (68%) who reported having intervened at least once in the past year were studied to explore the influence of the gender of the intervenor and the intoxicated individual and the intervenor's familiarity with the individual on the use and success of the different interventions. Women were just as likely as men to intervene. Findings reveal few gender differences in the frequency and success rates of the different interventions. Familiarity with the intoxicated individual increased the frequency and success of intervention. Hernandez ACR, Newcomb MD & Rabow J. Types of Drunk Driving Intervention: Prevalence, Success, and Gender. Journal of Studies on Alcohol, 56: pp. 408-413, 1995.

Interpersonal Relationships of Adult Children of Alcoholics

An examination of the differences between treatment-seeking and non-treatment-seeking adult children of alcoholics (ACOAs) and adult children of non-alcoholics (ACONAs) in regard to numerous aspects of interpersonal relationships indicates numerous differences between ACOAs in treatment and ACONAs not in treatment; however, there were no significant interactions between ACOA and treatment status, nor between ACOAs and ACONAs, regardless of treatment status with the exception of self-regard (ACONAs not in treatment reported higher self-regard than did ACOAs not in treatment). This is consistent with many other studies. Those seeking treatment reported significantly less affectional expression, lower self-regard, more depressive traits, and less dating competence and assertiveness compared to those not in treatment regardless of ACOA status. Subjects were 278 college students, 18-34 years of age. Newcomb MD, Stollman GD & Vargas JH. Adult Children of Alcoholics In and Out of Psychotherapy: Evaluating Problems with Intimacy and Close Relationships. Journal of Applied Social Psychology, 25: pp. 279-296, 1995.

Alcohol Use, Marijuana Use, and Memory

Memory associations between drug-related cues and drug use are likely to have motivational implications. Whether memory associations involving drug cues can be considered both a product and a predictor of alcohol and marijuana use consistent with the motivational model of drug-use memory association was examined. Results from a diverse college sample indicated that subjects' memory associations to ambiguous cues were significantly related to alcohol and marijuana use, independent from a number of possible correlates of these variables (e.g., family history of alcohol use, acculturation, friends' drug use). The analytical models showed that these relationships held whether memory association was analyzed as a predictor, or product, of drug use. Stacy AW. Memory Association and Ambiguous Cues in Models of Alcohol and Marijuana Use. Experimental and Clinical Psychopharmacology, 3: pp.183-194, 1995.

Drug and Alcohol Use among Ethnically Diverse Adolescents in Miami

Drs. Vega, Gil, Warheit, and Aspori report findings from their research comparing cigarette, alcohol, and illicit drug use among an ethnically diverse sample of 5,954 students in the Miami Public Schools. Annual interview data were collected from each student over a three year period. The authors found that African-American adolescents reported less drug use than their non-Hispanic and Hispanic counterparts. Hispanics born in the United States reported higher rates of drug use than foreign born Hispanics. However, drug use rates among foreign born Hispanic youth who had lived more than five years in the U.S. were similar to those of U.S. born Hispanics. The researchers conclude that cultural assimilation is a risk factor for drug use among foreign born Hispanics. J of Health and Social Behavior, in press.

Gang Membership and the Illicit Drug Trade

Dr. Hagedorn presents findings from a three year study involving in-depth interviews with 101 African-American and Hispanic male gang members living in Milwaukee. Contrary to what is generally believed, Dr. Hagedorn found that these youth engaged in the illicit drug trade only sporadically and many of them moved in and out of the conventional labor market as well. Almost all of the gang members interviewed said that they would accept full time employment

at modest wages instead of a criminal but lucrative lifestyle associated with the drug trade. Criminology, 32(2): pp. 197-219, 1995.

Use of Illicit Drugs by Female Homicide Offenders

Barry Spunt and his colleagues report findings from extensive life history interviews with 215 female felons convicted of homicides and incarcerated or on parole in New York City. As many as 70% of the felons reported regular use of illicit drugs prior to their incarceration and over 50% said that they were drug addicted. Further, over a third of the respondents said that they were high on drugs when they committed homicide and about 50% said that their victims were high at the time of death. Almost two-thirds of the felons said they perceived the homicides they committed as directly related to their drug use, primarily alcohol, crack cocaine, and powdered cocaine. International J of the Addictions, in press.

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

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

Director's Report to the National Advisory Council on Drug Abuse
February, 1996

Research Findings

Intramural Research

Treatment Branch, Clinical Trials Section

Drs. Kenzie L. Preston, Kenneth Silverman, Annie Umbricht-Schneiter, Anna DeJesus, Ivan D. Montoya, and Charles R. Schuster recently completed a study in which the efficacy of contingency management for improving compliance with naltrexone treatment was evaluated. The preliminary analyses suggest that the availability of the vouchers maintained subjects in treatment, and that vouchers given contingent on naltrexone ingestion selectively increased compliance with naltrexone administration. Thus, contingency management appears to be a useful treatment tool for increasing compliance with naltrexone maintenance in patients who are otherwise poorly motivated. This work, combined with other Clinical Trials research to develop regimens to initiate naltrexone administration during short opiate detoxification, should provide a basis for effective alternatives to opiate agonist maintenance.

Neuroscience Branch, Neuroimaging and Drug Action Section

An overview of the methods for imaging brain structure and metabolic activity using PET and SPECT, and MRI to determine the anatomical substrates of the effects of drug of abuse is presented. The effects of a variety of drugs of abuse, including alcohol, stimulants, benzodiazepines, opioids, and marijuana on these measures are reviewed. JM Stapleton and ED London. Imaging Techniques. In: Encyclopedia of Drugs & Alcohol, Vol. 2, JH Jaffe, ed., Macmillan, New York, NY., pp. 573-576, 1995.

The effectiveness of different nitric oxide synthase inhibitors (L-Nitroarginine and L-Nitroarginine methyl ester, and N-momomethyl-L-arginine) in attenuating opiate withdrawal signs was tested in rats, using a variety of regimens. L-Nitroarginine was more potent that L-Nitroarginine methylester, and N-momomethyl-L-arginine attenuated some behaviors not affected by the other agents. The potential utility of these agents in the clinical treatment of opiate withdrawal is discussed. London ED, AS Kimes, DB Vaupel. Inhibitors of Nitric Oxide Synthase and the Opioid Withdrawal Syndrome. NIDA Res. Monogr. 147: pp. 170-181, 1995.

Experiments performed on dissociated rat cortical cell cultures examined how ascorbic acid alters the neurotoxic effects of two agents, ascorbic acid and nitric oxide (generated from the breakdown of sodium nitroprusside). Ascorbic acid enhanced toxicity of nitric oxide, but it reduced that of NMDA. The results indicate that ascorbic acid produces neuroprotection by an action at the NMDA receptor, probably by antagonizing Ca 2+ influx starting the cascade of biochemical events that lead to the production of NO. JA Bell, C Beglan, and ED London. Interaction of Ascorbic Acid with the Neurotoxic Effects of NMDA and Sodium Nitroprusside. Life Sci., 58: pp. 367 371, 1995.

The neuroanatomical distribution of the dopamine transporter was assessed by immunohistochemical staining. With the use of newly developed polyclonal antisera raised against conjugated peptides corresponding to specific sequences in the dopamine transporter protein, staining was shown to be specific to dopamine neurons and terminals, with virtually no staining in neurons containing transporters for other amines (norepinephrine and serotonin). Dense staining was observed in the basal ganglia, nigro-striatal bundle and lateral habenula. Dopamine cell bodies in the substantia nigra and ventral tegmental area exhibited moderate staining, and distinct fiber staining with a laminar distribution was observed in the cingulate cortex. The functional significance of variations in the staining for dopamine transporter-like immunoreactivity is discussed. Freed C, R Revay, RA Vaughn, E Kriek, S Grant, GR Uhl, and MJ Kuhar. Dopamine Transporter Immunoreactivity in Rat Brain. J. Comp. Neurology, 359: pp. 340-349,

1995.

The distribution of dopamine immunohistochemical staining was examined in brain regions where the presence of dopamine transporter has been controversial with moderate but sparse staining of fibers in the amygdala and olfactory bulb. In contrast, staining of dopaminergic cell bodies in the median eminence was barely detectable despite light staining of fibers in this area. The results provide further support for the hypothesis that different cell groups differ in their expression of dopamine transporter. Revay, R, RA Vaughn, S Grant, and MJ Kuhar, Dopamine Transporter Immunohistochemistry in Median Eminence, Amygdala, and Other Areas of the Rat Brain. Synapse, in press.

The hypothesis that sigma receptors mediate ischemic brain injury was tested using 4-phyenyl-1 (4-phenylbutyl) piperidine (PPBP), a potent sigma receptor ligand. When the drug was administered during induction of transient focal ischemia, it reduced injury volume dramatically and increased somatosensory evoked potentials, a measure of functional recovery. The results indicate that sigma receptors play an important role in ischemic brain injury, and that PPBP can afford protection when administered at the end of an ischemic episode and during reperfusion. H Takahashi, JR Kirsch, K Hashimoto, ED London, R Koehler, and RJ Traystman. PPBP [4 phenyl-l-(4-phenylbutyl) piperidine], a Potent Sigma--Receptor Ligand, Decreases Brain Injury after Transient Focal Ischemia in Cats. Stroke, 26: pp. 1676-1682, 1995.

A stoichiometric analysis of binding to various domains of the N-methyl-D-aspartate (NMDA) receptor was conducted using membranes from various brain regions of rats. The ratio of the density of [3H]CGP39653 binding to [3H]dizocilpine binding was>1 in frontal cortex and hippocampus, 1 in striatum and spinal cord and<1 in cerebellum. When [3H]dichlorokynurenic acid binding was compared to [3H]dizocilpine binding, the ratios were>1 in frontal cortex, hippocampus and striatum, 3 - 4 in cerebellum, and 2 in spinal cord. These observations suggest that a single channel complex may have more than one binding site for NMDA and/or glycine and that the stoichiometry between the binding domains of the NMDA receptor varies regionally. T Matsunaga, AG Mukhin, and ED London. Regionally Distinct Stoichiometry for N-methyl-D aspartate Receptor Domains in Brain. Neuroreport, in press.

Neuroscience Branch, Molecular Psychiatry Section

Dr. Jean Cadet has shown previously that the antioxidant enzyme CuZnsuperoxide dismutase protects against the toxic effects of the drug. In a recent study he has shown that cells that express the proto-oncogen, bcl-2, are protected against the toxic effects of the drug in vitro. Moreover, using flow cytometry, immunofluorescent staining, and DNA electrophoresis, he has shown that METH can cause DNA strand breaks, chromatin condensation, nuclear fragmentation, and DNA laddering. All these changes were prevented by expression of bcl-2. Moreover, scientists within the section have also shown that METH treatment can cause accumulation of cells in the G2 phase of the cell cycle. This is consistent with METH having caused DNA damage since drugs that cause DNA damage are known to cause cell cycle arrest so that DNA damage is not propagated to daughter cells during the process of mitosis. These data provide, for the first time, evidence that METH can cause significant molecular changes that are consistent with the process of apoptosis. These data also open a new line of investigation that will focus on possible direct genetic effects of these drugs.

Preclinical Pharmacology Branch, Psychobiology Section

Studies of benztropine analogs continue to provide interesting leads for a better understanding of how actions at the dopamine transporter may or may not be translated into physiological effects that result in drug abuse. These compounds will provide interesting leads in the development of treatments for cocaine abuse. Recently commercial interest has been expressed for several of the compounds covered by a U.S. Provisional Patent Application (015,280-237,000) which was filed in June, 1995.

The D3 dopamine receptor system has been proposed as critically involved in cocaine abuse. Unfortunately, there have not been adequate in vivo assays to characterize the effects of D3 agonists, and distinguish them from other drugs acting on the dopamine system. We have developed a behavioral procedure that distinguishes selective D3 agonists from other drugs acting on the dopamine system. This procedure will allow for full characterization of the in vivo pharmacology of this class of novel dopamine receptor agonists.

Cocaine binding curves have two components (high and low affinity) and the inhibition of dopamine uptake can exhibit two components. One of these components, comprising approximately 25% of the total dopamine uptake, exhibits a high sensitivity to cocaine and is inhibited by low concentrations of the drug. The other component is much less sensitive to inhibition. Researchers in the section have recently shown that meperidine, an atypical opioid agonist that shares some structural features with the phenyltropane (WIN) analogs of cocaine, selectively inhibits only the high affinity component of dopamine uptake. This effect is mediated by the dopamine transporter and is not produced by opioid mechanisms. Further, meperidine, in the presence of naltrexone to block its prepotent opioid actions,

produces subjective effects like those of cocaine in primates trained to discriminate cocaine from saline. These data suggest that the actions of meperidine that are atypical of opioids are due at least in part to activity at the dopamine transporter. In addition, meperidine appears to interact predominantly with the high affinity component of the dopamine transporter, and this high-affinity component may be the site of importance for the production of cocaine's behavioral effects.

In an attempt to discover a selective dopamine D1 antagonist that would not penetrate the blood brain barrier, a novel class of 3-alkylamino- and 3-cinnamylamino-substituted benzazepine analogs were prepared. Several of these compounds bound with moderately high affinity and selectivity to the dopamine D1 receptor and were D1 antagonists as evidenced by their ability to inhibit dopamine-stimulated adenylyl cyclase. Structure-activity relationships derived from these series of compounds coupled with molecular modeling studies suggested that an amine-accepting binding domain that exists approximately 8 Å away from the pharmacophoric benzazepine nitrogen appears to be important in the binding of the most active compounds. This binding domain had not been previously described and may provide a target for novel, therapeutically useful dopamine D1 antagonists.

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

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

Director's Report to the National Advisory Council on Drug Abuse
February, 1996

Program Activities

New Program Announcements/RFAs

A new prevention research announcement, **"Drug Abuse Prevention Through Family Intervention,"** was issued by NIDA on January 26, 1996. The purpose of the announcement is to test under controlled conditions, the efficacy and effectiveness of theory-based drug abuse prevention intervention for families at risk for abusing drugs.

The Clinical Medicine Branch, Division of Clinical and Services Research has issued a program announcement, **Medical and Health Consequences of Drug Abuse** (PA 96-010), that appeared in the *NIH Guide*, Vol 24, No.24, December 8, 1995. The purpose of this PA is to stimulate a wide range of studies on the medical and health consequences of drug abuse, including mental disorders. The announcement encourages research on factors, processes and mechanisms associated with the onset, duration, clinical manifestations and treatment of medical and health consequences of drug abuse. This includes general population-based and clinical epidemiologic, clinical, and laboratory studies which address issues of morbidity and mortality of drug abuse.

In December 1995, MDD published RFA 96-03 **"Novel Pharmacotherapies for Cocaine and Other Psychostimulant Dependence"**. Interest to date appears quite high. The application deadline is February 21, 1996 and of January 24, 25 letters of intent had been received. This RFA specifically excludes mechanisms associated with the Biogenic Amine Transporter.

On January 26, 1996, NIDA, together with the National Institute of Justice, the NIH Office of Behavioral and Social Sciences Research, the NIH Office of Research on Women's Health, The National Institute on Aging, The National Institute on Alcohol Abuse and Alcoholism, the National Institute of Mental Health, the NIH National Center on Child Abuse and Neglect and the Centers for Disease Control and Prevention issued an RFA (OD-96-002) entitled **"Research on Violence Against Women and Violence Within the Family"**.

Medications Development Research Units (MDRUs)

The Medications Development Division, in cooperation with the Department of Veterans Affairs, completed the site review and competitive selection process for clinical Medication Development Research Units (MDRUs) to be located within the VA system. Specifically, the MDRUs will evaluate compounds that treat the symptoms and disease of drug abuse, including medications to: achieve abstinence; block the effects of abused drugs; reduce the craving for abused drugs; block or reverse the toxic effects of abused drugs; and prevent relapse in persons who have been detoxified from drugs of abuse.

In response to a request for proposals released last December, 26 proposals were received, 19 proposals were peer reviewed, seven medical centers were site visited and five were selected for funding. The network of MDRUs will be established at the following VA Medical Centers: Boston (Domenic A. Ciraulo, M.D.): Cincinnati(Eugene Somoza, M.D., Ph.D.); New York/Northport (John Rotrosen, M.D.) Philadelphia (Charles O'Brien, M.D., Ph.D.) and West Los Angeles (Walter Ling, M.D.). Each unit provides a unique combination of staff with expertise in addiction medicine and the medications development process and well established affiliations with private and public sector institutions.

Buprenorphine Progress

In April 1995, a presentation was made to the FDA Drug Abuse Advisory Council (DAAC) leading to DAAC recommendation of approvability of buprenorphine mono substance for drug abuse treatment. Specific pharmacokinetic studies are still required by the FDA prior to filing of the buprenorphine and buprenorphine/naloxone combination NDAs. It is the sponsor's intention to launch the mono with the combo in 97; final NDA for mono is targeted for submission on 6/96. Buprenorphine mono substance has been successfully registered for treatment of opiate dependence in France with product launch in October 1995, based in considerable part on U.S. experience and data.

Health Services Research Centers

Two new health services research center grants were funded in September: the Center for Research on Substance Abuse Managed Care, at Brandeis University (Dennis McCarty, Ph.D., Center Director) and the Center for Health Services Research on Chronic Drug Users, at the University of Miami (Clyde McCoy, Ph.D., Center Director).

Health Services Research Resource Center

Under NIDA's Health Services Research Resource Center contract several tasks are under way including:

1. completion of a compendium of research-based talking points on treatment effectiveness;
2. an extensive annotated bibliography on treatment effectiveness;
3. the development of a literature review on prevention and treatment assessment methodologies; and
4. an upcoming developmental meeting on information systems management for the Center.

Women's Health Supplements

The NIH Office of Research on Women's Health, through their annual supplement program, awarded 4 administrative supplements to current NIDA grants. This supplement program stimulates current NIH grantees to address women and gender issues. For the first year, NIDA has funded some of the applications ORWH was unable to fund. Of the 20 applications NIDA submitted to ORWH for possible funding, NIDA funded 11. The 20 applications represented approximately one fourth of those submitted by NIDA grantees. All applications submitted to ORWH by NIH institutes were reviewed by a DRG-conducted committee of NIH program staff. Drs. Jag Khalsa (Clinical Medicine Branch, DCSR) and Cora Lee Wetherington (Behavioral Pharmacology Branch, DBR & Women's Health Coordinator) served on the review committee.

Minority Health Supplements

The NIH Office for Research on Minority Health provided supplemental funds to grantees to support several minority program efforts proposed by NIDA. These include a Native American initiative which focuses on efforts to design effective drug and HIV/AIDS prevention programs with Native American populations and meetings to promote research collaborations between majority and minority institutions, stimulate the involvement of community-based organizations in drug abuse research in African American and Hispanic communities, and better understand drug abuse research career development patterns and needs in African American populations.

NIDA Abuse Liability Review Committee

In response to a request from the NIDA Advisory Council (February 1995), a NIDA-wide Abuse Liability Review Committee has been formed. Dr. Lynda Erinoff (BSRB/DBR) is committee coordinator, and the committee is reporting to NIDA's Deputy Director, Mr. Richard Millstein. The committee held its first meeting in November and decided to frame its efforts by addressing several broad questions: What is the current extramural and intramural portfolio in abuse liability research and testing? What is the current scientific basis for abuse liability testing? What gaps/opportunities exist? How can communication of abuse liability issues within NIDA and dissemination of results to the outside world be improved? Dr. Art Jacobsen will address the Committee at its next meeting.

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

Director's Report to the National Advisory Council on Drug Abuse
February, 1996

Congressional Affairs

The End of the First Session

The first session of the 104th Congress ended on Wednesday, January 3. The second session began immediately thereafter. The first session was the 2nd longest in history. Among the business not finished during the first session are 6 FY 96 appropriations bills, including H.R. 2127, the Labor/HHS appropriations bill. Only 7 appropriations bills have been signed into law.

Continuing Resolution for the NIH and Other Funding

On January 6, the President signed H.R. 1358 which funded several targeted programs through September 30, 1996. One of these programs was the National Institutes of Health (NIH). NIH was funded at the level set under the House-passed version of H.R. 2127, the Labor/HHS appropriations bill. H.R. 1358 allows FY 1996 funding of $11.9 billion for NIH, a 5.7 percent increase over FY 1995.

As reported by WASHINGTON FAX, in their January 10, 1996 issue of Life Science:

- Funding for NIH and CDC was secured outside of their regular appropriations bill through the advocacy of Representative John Porter (R-IL), who chairs the House Appropriations Labor, Health and Human Services, Education, and Related Agencies (L/HHS) subcommittee.
- In a floor speech during debate on the CR Friday evening, Porter spoke out on behalf of the basic biomedical research conducted under the auspices of NIH and in support of the 5.7% funding increase over FY 95....
- Porter called to mind the "academic and research institutions all across the country" supported by NIH and reminded House members that "the basic research can only be done by government, because there is no immediate profit motive involved." He also pointed out that the U.S. biotechnology and pharmaceutical industries, which provide high-tech, well-paying jobs, depend on basic research that comes out of NIH.
- Porter did not submit a budget plan for NIH. Instead, said a member of the House Appropriations staff, dollar amounts for individual NIH Institutes and divisions remain to be worked out, as well as the method for funding NIH's Office of AIDS Research (OAR). The method for providing AIDS research funds to NIH institutes differs greatly in the House and Senate versions of the FY 96 appropriations bill, with the House combining AIDS research funds into each institute's funding total and the Senate providing a lump sum of $1.39 billion for OAR.

Congressional and Staff Changes/Departures

By January 16th, a record 13 Senators had announced that they will not seek another term in 1996. (The previous record was 12 Senators in 1896.) They include Senator Nancy Kassebaum, R-KS, chair of the Senate Labor and Human Resources Committee, and Senator Mark Hatfield, R-OR, who chairs the Senate Appropriations committee. Kassebaum's committee is gearing up for NIH reauthorization hearings, with the first round currently scheduled for March 6 and 7.

In addition to the departing Senators, numerous House lawmakers have said they will not seek reelection. Included among them is Representative Bob Walker, R-PA, who chairs the House Science Committee.

Michael Stephens, longtime aide to the House Labor/HHS appropriations subcommittee has left his position to become vice president of the Washington consulting firm of Van Scoyoc Associates.

CONGRESSIONAL DEPARTURES

104th Congress
(Updated 01/16/96)

RETIRING

Member	Began Service
SENATE	
Bill Bradley, D-N.J.	1979
Hank Brown, R-Colo.	1991
William S. Cohen, R-Maine	1979
Jim Exon, D-Neb.	1979
Mark O. Hatfield, R-Ore	1967
Howell Heflin, D-Ala.	1979
J. Bennett Johnston, D-La.	1973
Nancy Landon Kassebaum, R-Kan.	1979
Sam Nunn, D-Ga.	1973
Claiborne Pell, D-R.I.	1961
David Pryor, D-Ark.	1979
Paul Simon, D-Ill.	1985
Alan K. Simpson, R-Wyo.	1979
HOUSE	
Anthony C. Beilenson, D-Calif. [24]	1977
Tom Bevill, D-Ala. [04]	1967
Bill Brewster, D-Okla. [03]	1991
William F. Clinger, R-Pa. [05]	1979
Ronald D. Coleman, D-Texas [16]	1983
Cardiss Collins, D-Ill. [07]	1973
E. "Kika" de la Garza, D-Texas [15]	1965
Jack Fields, R-Texas [08]	1981
Pete Geren, D-Texas [12]	1989
Steve Gunderson, R-Wis. [03]	1981
Mel Hancock, R-Mo. [07]	1989
Andrew Jacobs Jr., D-Ind. [10]	1975
Harry A. Johnston, D-Fla. [19]	1989
Blanche Lambert Lincoln, D-Ark. [01]	1993
Jan Meyers, R-Kan. [03]	1985
Kweisi Mfume, D-Md. [07]	1987
"Sonny" Montgomery, D-Miss.[03]	1967
Carlos J. Moorhead, R-Calif. [27]	1973

John T. Myers, R-Ind. [07]	1967
Pete Peterson, D-Fla. [02]	1991
Patricia Schroeder, D-Colo. [01]	1973
Gerry E. Studds, D-Mass. [10]	1973
Ray Thornton, D-Ark. [02]	1991
Barbara F. Vucanovich, R-Nev. [02]	1983
Robert S. Walker, R-Pa. [16]	1977
Pat Williams, D-Mont. [AL]	1979
Charles Wilson, D-Texas [02]	1973

Bills of Interest

H.R. 4, welfare reform passed both Houses, but was vetoed by the President. While the House passed version of the bill had included a provision which would have provided for the authorization, but not the appropriation of funding for NIDA's medication development activities through savings from the Supplemental Security Income program, the final bill did not include such a provision.

Conference action on **H.R. 2020, the Treasury, Postal Service, and General Government Appropriations Act, 1996** was completed on October 25, and was signed into law on November 19 becoming Public Law 104-52. The ONDCP will receive $8 million for FY 96.

S. 790, the Federal Reports Elimination and Sunset Act of 1995 -This measure has been cleared for the President. S. 790 would eliminate or modify over 200 statutorily-mandated reporting requirements for Federal agencies, and four years after enactment, would eliminate all annual, semi-annual, or regular periodic statutorily-mandated reporting requirements. Members of Congress would be authorized to reauthorize those reports deemed necessary. Reports required by the Inspector General Act of 1978 or the Chief Financial Officers Act of 1990 would be exempt. This measure became Public Law 104-66, signed by the President on December 21, 1995.

H.R. 2196, the National Technology Transfer and Advancement Act of 1995 -On December 12, the House passed H.R. 2196 by voice vote. The bill would amend the Stevenson-Wydler Technology Innovation Act of 1980 with respect to inventions made under cooperative research and development agreements (CRADAs). Provisions of the legislation address the assignment of intellectual property rights to a collaborating party. Current law provides little guidance on what intellectual property rights a collaborating partner should receive from a CRADA.

H.R. 1271, the Family Privacy Protection Act, will likely be considered by the Senate Governmental Affairs Committee in late February or early March.

Other Items of Interest

Army General Barry R. McCaffrey has been asked to serve as the new ONDCP Director. General McCaffrey, one of the most highly decorated living generals who currently runs the military's Southern Command in Panama, will become the 4th Director after William J. Bennett, Bob Martinez and Lee P. Brown, who left ONDCP in January for a position at Rice University.

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

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

Director's Report to the National Advisory Council on Drug Abuse
February, 1996

International Activities

During September 1995, NIDA Director, Alan I. Leshner, Ph.D., addressed the **Ministers of Health of the Region of the Americas**, encouraging public health ministries in the region to include substance abuse in their agendas for action. He urged policymakers to make research, education, prevention and treatment a public health priority using international strategies and collaboration to confront the health aspects of drug abuse and addiction. The Ministers were in Washington for the 38th Directing Council of the Pan American Health Organization.

In September 1995, DEPR staff Zili Sloboda, Nicholas Kozel, Mario de la Rosa and Moira O'Brien, together with NIDA grantees and Latin American researchers from Bolivia, Columbia, Ecuador, Peru and Venezuela participated in a planning meeting to develop a curriculum for the **Andean Region Epidemiology Methods and Research Development Workshop** scheduled to take place in Columbia in 1996. This project is being carried out under a Letter of Agreement with the Department of State.

NIDA's International Program is coordinating planning for a one-day satellite meeting to be held on June 22 entitled **"Building International Research in the Field of Drug Abuse,"** to be held at the 1996 CPDD meeting in San Juan, Puerto Rico. The meeting agenda is being planned by an international organizing group including current and alumni fellows of the Humphrey and INVEST Research Fellowship programs. Abstracts are invited from U.S. and non-U.S. scientists reporting on international collaborative research. Abstract, registration and travel award information are available through the NIDA International Program office.

Understanding Drug Addiction in the Brain, written by staff of the Medications Development Division, is being published in English, French and German by the Swiss Public Health Service. The article is based on a presentation given by Barbara H. Herman, Director, Clinical Opioid Medications Program, at the Swiss Project on Medical Prescription of Narcotics in Thun, Switzerland in November 1993.

NIDA's International Program had wide participation in the November conference of the **American Methadone Treatment Association** in Phoenix. At the NIDA-sponsored International Forum, attended by more than 100 participants, International Program Acting Director Patricia Needle presented a revised edition of the manual, **"Methadone Maintenance Treatment: Translating Research into Policy,"** and moderated a panel of experts who reported on international issues in methadone maintenance treatment research. The panel included Harry Haverkos, Office on AIDS, Frank Vocci, MDD, NIDA, grantee Mary Jeanne Kreek, and methadone researchers John Caplehorn of Australia, Mark Reisinger of Belgium, and Olof Blix of Norway. The AMTA conference also included an International Plenary Session that featured presentations by Deputy Director Richard A. Millstein, Dr. Kreek and government officials from Australia, the Netherlands and Thailand.

Edward Cone and Marilyn Huestis, both of NIDA's Division of Intramural Research (DIR), participated as invited speakers in the **1995 International Conference and Workshop on Hair Analysis in Forensic Toxicology** held in November 1995 in Abu Dhabi, United Arab Emirates.

During November, NIDA welcomed the 13 Hubert H. Humphrey Fellows in Drug Abuse from Johns Hopkins University for an orientation overview of NIDA's research programs. The half day program included presentations by the Divisions of Basic Research, Clinical and Services Research and Epidemiology and Prevention Research.

Steven Gust, Office on AIDS, and NIDA grantee Sherry Deren attended the **Third European Symposium on Drug Addiction and AIDS** in Istanbul, Turkey, during October. Their presentations included reviews of U.S. research on

the epidemiology and prevention of drug abuse and HIV/AIDS as well as NIDA's AIDS Community-Based Outreach/Intervention Research Program.

In October, Zili Sloboda, Director, DEPR, and Patricia Needle, International Program, represented NIDA at the **Second International Symposium on the Economic and Social Costs of Substance Abuse**. The meeting, held in Montebello, Quebec, was coordinated by the Canadian Centre on Substance Abuse and included participants from 7 countries and a number of international organizations. Symposium participants reviewed guidelines developed at the First International Symposium and discussed ways to expand the concept of economic cost studies to the international community.

As part of the **U.S.-Russian Joint Commission on Science and Technology**, NIH hosted a delegation in the area of health education and promotion during October. Meyer Glantz, DEPR, and Patricia Needle, International Program, gave presentations on NIDA's prevention and education programs.

The joint **U.S.-India Workshop on Behavioral and Social Research for IV Drug Abuse and HIV Prevention** is now scheduled for March 1996. Supported through a Letter of Agreement with the Department of State, this collaborative scientific meeting of Indian and U.S. scientists has been organized to stimulate behavioral and social research immediately useful to the prevention of HIV/AIDS and to develop effective drug abuse and HIV/AIDS prevention interventions. A group of NIDA staff and grantees will travel to New Delhi to make presentations on behavioral and social research methodologies, and will work with Indian colleagues to finalize collaborative proposals for submission to the U.S./India Fund.

Dr. Zili Sloboda, representing the United States, attended the meeting of the **European Epidemiology Experts ("The Pompidou Group") of the European Council** in Strasbourg on November 7 - 9, 1995. She presented NIDA supported epidemiologic research findings and discussed the outcome of the first meeting of the International Drug Abuse Epidemiology Network held in May 1995 in Vienna, Austria.

At the invitation of the **Portuguese Monitoring Center on Drug Abuse**, Dr. Zili Sloboda presented a workshop on prevention programming and prevention research on November 6, 1995. As a result of her workshops and her visit to Spain, the Spanish government has provided support for the translation into Spanish and the printing of one of three of NIDA's monographs on prevention research. The remaining two monographs are also scheduled for translation.

Mr. Nicholas Kozel (DEPR) cochaired the **South Asian Multi-City Epidemiology Work Group** meeting held in Islamabad, Pakistan on October 30-November 1, 1995. The South Asian Work Group is composed of researchers from Bangladesh, India, Nepal, Pakistan, Sri Lanka and Turkey and 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.

Richard H. Needle, Ph.D., M.P.H., gave a presentation entitled **"Ethnography of HIV Risk Taking Behavior: Implications for Prevention"** at the **Fourth Annual Canadian Epidemiological Meeting on HIV**, in Banff, Canada, December 7-9, 1995.

Dr. Peter Hartsock participated in the October 27, 1995 conference in Washington, D.C. on **"Horizontal and Vertical Integration: Opportunities, Limits and the Role of Information Technology."** This international conference addressed emerging strategies for health intervention and care. The conference was sponsored by the European Community in collaboration with NIH and other U.S. Federal agencies.

On December 13, 1995, Dr. Peter Hartsock participated in the first advisory committee meeting of the National Council for International Health to plan for this summer's conference on **"Global Health: Future Risks, Present Needs."** The conference will be held to address new and re emerging diseases.

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

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

Director's Report to the National Advisory Council on Drug Abuse
February, 1996

Meetings/Conferences

NIDA sponsored a satellite symposium at the Society for Neuroscience annual meeting in San Diego on November 11, 1995, entitled **"Advances in Drug Abuse Research on Nicotine".** This symposium featured talks by experts in the molecular, neurobehavioral, and human aspects of nicotine and smoking research. The meeting was organized by the Neuroscience Consortium Workgroup at NIDA, with Dr. David Johnson, DBR, chairing the symposium.

The Division of Epidemiology and Prevention Research, Prevention Research Branch held a research meeting on **"Drug Abuse Prevention Through Family Interventions"** on January 25 26, 1996. Twenty-four experts in the field of family interventions research presented state-of-the art research findings and formulated specific recommendations for future NIDA prevention research. Discussions and presentations centered around program models, current research methods and applications from related fields, juvenile justice, education, and social work.

The Community Research Branch, DEPR, in collaboration with NIDA's Office of Special Populations, hosted a workshop for administrators, faculty, and staff from 10 Historically Black Colleges and Universities (HBCU) on January 17-19, 1996. The workshop examined some of the issues which serve as barriers to HBCUs involvement in drug abuse research and provided participants with information and expert assistance to enhance their readiness to pursue drug abuse research careers. The meeting also strengthened support for drug abuse research at the administration level at the colleges represented at the workshop.

NIDA's Office on AIDS, in conjunction with the CDC and NIAAA, conducted a meeting entitled **"Drug Use, Men Who Have Sex With Men, and HIV Infection"**, October 23-24, 1995.

On October 20, at the **American Society of Addiction Medicine (ASAM)** conference on Expanding Role of Neurobiology in Addiction Medicine, the Medications Development Division hosted an evening Planned Meeting focus group titled **"Mainstreaming Therapies into Medical Practice"**. Dr. Charles Grudzinskas and Drs. Annie Umbricht, Donald Wesson and Frank Vocci presented to the ASAM group.

On December 8, 1995, NIDA held a **Health Services Research Planning Meeting with Substance Abuse Practitioners** at the Bethesda Marriott Hotel in Bethesda, Maryland. This was one in a series of meetings we have sponsored to help shape NIDA's research agenda. The goal of each of these meetings has been to solicit innovative research ideas and strategies in a particular area of drug abuse research by inviting participants to think broadly and expansively. For this meeting, we were specifically interested in obtaining the input of substance abuse practitioners about what health services research issues NIDA needs to address, what questions need to be answered, and how NIDA can make the results of our health services research program useful and easily accessible.

On January 25-26, 1996, NIDA held an **Ad Hoc Review of MDD's Clinical Cocaine Program**. An overview of the program's current portfolio and potential future clinical trials was presented in order to obtain input on current strategy.

On November 7, the Prevention Work Group organized (Helen Cesari) and sponsored (Bill Bukowski) a meeting of the **Drug Related Violence Research Planning Committee** in Bethesda, MD. The group was charged by NIDA Director, Dr. Alan Leshner to help NIDA elevate the level of scientific discourse on drug related violence and move public understanding of this complex subject forward by developing the key questions NIDA should be answering. The meeting was chaired by Dr. Donald Vereen.

The **NIDA/ORMH Research Development Seminar Series on Program Announcements** was held in Bethesda,

MD on May 11-12, 1995. This workshop provided technical assistance to 30 minority investigators interested in NIDA's program announcements on drug abuse in minority and underserved populations and clinical research on human development and drug abuse.

A **NIDA/State University of New York at Old Westbury/Nikon/Morrell Instruments, Image Analytics Neurosciences Meeting** was held in Melville, L.I., NY on May 31-June 2, 1995. Eight faculty members participated in this research skills development seminar.

NIDA/National Nurses Society on Addictions Research--Seminars on Nursing Research Opportunities in Drug Abuse Research were held in Bethesda, MD on July 24-25, 1995 and November 27-28, 1995.

NIDA's African American Researchers and Scholars Meeting was held in Washington, DC, December 4-5, 1995. Approximately 20 researchers and scholars involved with drug abuse issues related to African American populations participated in discussions regarding initiatives to increase and improve drug abuse research on Black populations.

NIDA's Hispanic Initiative Policy Workshop was held in Rockville, MD, December 13-14, 1995. Approximately 20 researchers and scholars involved in drug abuse issues with Hispanic populations discussed activities needed to encourage research on drug abuse in Hispanic populations.

The **NIDA/Howard University Drug Abuse Research Technical Assistance Project (DARTAP) National Technical Assistance Meeting** was held in Bethesda, MD, January 17-19, 1996. Over 30 administrators and faculty members from 10 Historically Black Colleges and Universities participated in an intensive grant development workshop. The focus of this meeting was on infrastructure development needs and plans.

Drs. Donald Vereen and Steven Zukin represented NIDA and presented an update of NIDA research and research training activities at the annual meeting of the **American Association of Chairmen of Departments of Psychiatry** on October 28-29 in Washington D.C.

Dr. Timothy P. Condon, Acting Deputy Director, OSPC, presented at the Research Training Fair held in conjunction with the Research Forum of the **42nd Annual Meeting of the American Academy of Child and Adolescent Psychiatry**, October 17-22, 1995, in New Orleans. Dr. Condon represented NIDA at the Academy events honoring the Jeanne Spurlock Research Fellows.

J.C. Comolli, OSPC, was invited by Hazeldon to participate in a planning and strategy meeting at the central offices in Minnesota concerning issues unique to chemically dependent women and women with children. The focus of the initiative is removing impediments to treatment availability and access, including the impacts of social attitudes, legal issues and medical concerns for pregnant women and their children. The purpose of the meeting was to consider alternative approaches and collaborative efforts to better respond to these issues, both directly through the drug and alcohol field itself, and through community and public education campaigns.

Pat Rosenman, Ph.D., of the Science Policy Branch, OSPC, served on both the Conference Planning Committee and the Workshop Committee of the **American Methadone Treatment Association International Conference** in Phoenix, AZ, Nov. 1-4. Dr. Rosenman coordinated the 4 NIDA workshops presented at the conference and assisted NIDA's International office with their participation and activities. NIDA has worked with this organization for several years in support of methadone maintenance treatment for opiate abusers.

Pat Rosenman, Ph.D., moderated a session at the **American Public Health Association (APHA) Meeting** in October in San Diego, CA. She also participated in the activities of the Executive Board of the Alcohol, Tobacco and Other Drugs Section of APHA.

On November 1, Dr. Frank Vocci, MDD, presented at an **International Symposium of the American Methadone Treatment Association (AMTA) meeting**. Dr. Vocci spoke on the **Relationship Between Methadone Pharmacokinetics and Efficacy.**

On November 3, Dr. Vocci spoke at a symposium on medications development at the AMTA meeting in Phoenix, AZ. Drs. Thomas Payte and Walter Ling were co-presenters.

On November 3, 1995, Dr. Charles Grudzinskas, Dr. Frank Vocci, and Mr. Joel Egertson of MDD met with members of the **American Methadone Treatment Association Board of Directors** to discuss the development of new medications to treat addiction. The meeting was held at the suggestion of Mark Parrino, M.D., President of AMTA and is part of an on-going effort to maintain a constructive dialogue with treatment providers. Another meeting to address treatment providers is scheduled for March, 1996 in New York City.

On December 12, Dr. Charles Grudzinskas gave a presentation on the NIDA Medications Development Program at the

American College of Neuropsychopharmacology (ACNP) Industry/Government Luncheon Meeting, San Juan, Puerto Rico.

Dr. Jaylan Turkkan, Chief of the Behavioral Sciences Research Branch, DBR, presented a paper in December at the annual meeting of the Pavlovian Society in Baltimore entitled **"Information Atherosclerosis in Science"**.

Dr. Jaylan Turkkan chaired an NIH-wide meeting on December 15 to facilitate the formation of a **Behavioral and Social Sciences Interest Group** similar to the many biomedical and molecular biology interest groups already formed at NIH. Sponsors of the meeting were the NIH Office of Behavioral and Social Sciences Research and the NIH Health and Behavior Coordinating Committee (Drs. Turkkan and Colliver (DEPR) are the NIDA representatives). Participants at the meeting discussed how this interest group can aid, not only in coordinating research efforts among intramural scientists, but also in extramural program building. A second meeting is now planned.

Dr. Lynda Erinoff and Dr. David Shurtleff of the Behavioral Sciences Research Branch, DBR, represented NIDA at the **25th Annual Meeting of The Society for Neuroscience** to discuss Basic Behavioral Science research opportunities with meeting attendees.

Dr. Rao S. Rapaka, Chief, Basic Neurobiology and Biological Systems Branch, DBR, attended the Tenth Annual Meeting and Exposition of the **American Association of Pharmaceutical Scientists (AAPS)** on November 5-9 in Miami Beach, FL. Dr. Rapaka is the Chair-Elect for the Medicinal and Natural Products Chemistry Section of the AAPS. He moderated a general poster session on **"Medicinal and Natural Products Chemistry"** for the section and co-moderated an AAPS symposium entitled **"3D Structure-Based Drug Design"**.

Drs. Chiiko Asanuma, Harold Gordon, and Joseph Frascella, ECNB, DCSR, attended the **25th Annual Meeting of the Society for Neuroscience** in San Diego, CA, November 1995, where they discussed their program initiatives with research neuroscientists.

Dr. Mac Horton, ECNB, DCSR, attended the **Third Annual Conference on Psychopathology, Psychopharmacology, Substance Abuse and Culture** held in Los Angeles, California on October 5-7. Dr. Horton presented a lecture on **"Comorbidity of Drug Abuse Treatment: Where and What"** and chaired a paper session on the topic **"Is Drug Abuse Treatment Effective?"**

Dr. Horton represented NIDA at the **National Academy of Neuropsychology Fifteenth Annual Meeting** held in San Francisco, California on November 1-3. Dr. Horton presented a lecture at the meeting on **"Research Opportunities in Etiology and Clinical Neurobiology"** and also discussed research training issues.

Dr. Frank Tims and Mr. Tom Vischi, both of DCSR, were invited speakers at the **CSAT Target Cities Technical Assistance Workshop** held November 2, 1995.

Ms. Carol Cowell, DCSR, presented a paper, **"Data Issues in Behavioral Managed Care,"** at the **American Public Health Association Annual Meeting** in San Diego, California, October 28 - November 3, 1995.

On October 12-14, 1995, Dr. Peter Delany, DCSR, presented 2 papers at the **Annual Conference of the National Association of Social Workers: "AIDS and Drug Abuse Treatment,"** and **"The Role of Social Workers In Disaster Settings".**

Dr. Delany participated in a meeting with the **Institute for the Advancement of Social Work Research**, on November 3, 1995, to complete a final report to the Department of Defense on the Women's Health Initiative.

On November 10, 1995 Dr. Peter Delany gave the Keynote Address at the **Iowa Consortium on Substance Abuse Conference on Health Services Research**.

Dr. Delany represented NIDA at the **Center for Substance Abuse Treatment's Annual Meeting on Criminal Justice Initiatives**, November 29, 1995.

Dr. Delany represented NIDA at the **Therapeutic Communities of America Conference on Research on and Treatment of Substance Abusing Adolescents**, December 4-6, 1995.

Adele Roman, M.S.N., NIDA's Deputy Coordinator of Women's Health was a Federal panel member at the **Center for Substance Abuse Prevention's "National Women's Resource Center Community Team Training Institute"**, held October 29 - November 2, which focused on health issues of American Indian Women. Ms. Roman provided information on NIDA's programs on women and special populations.

Dr. Lula Beatty, Chief of NIDA's Special Populations Office presented a session on **"Drug Abuse in Minority**

Populations: Research Needs" for graduate students and faculty in the counseling department, University of Maryland, College Park in May, 1995.

Dr. Lula Beatty presented a session on research mechanisms at NIH for the **Howard University Center for Drug Abuse Research** on July 12, 1995.

Dr. Lula Beatty presented a session on special populations programs at NIDA at the **National Association of Social Worker's Meeting** on pursuing research in drug abuse on July 14, 1995.

Dr. Lula Beatty moderated a session titled **"Comorbidity: Mental Illness and Substance Abuse"** at the **Third Annual Conference on Psychopathology, Psychopharmacology, Substance Abuse and Culture** in Los Angeles, Oct. 5 - 7, 1995.

Dr. Lula Beatty attended the **Hispanic Town Meeting Video Teleconference** (NIH site) on September 23, 1996.

Dr. Lula Beatty presented a session on research opportunities at NIDA at the **Annual Meeting of the National Congress of Black Faculty** in Washington, DC, October, 1995.

Dr. Lula Beatty presented a session on developing research infrastructure for drug abuse research at historically Black medical schools at the **Annual Meeting of the Black Psychiatrists of America** in Barbados, November 4, 1995.

Dr. Lula Beatty presented a session on obtaining postdoctoral fellowships from NIH for the **Howard University Graduate School of Arts and Sciences**, January 16, 1996.

Dr. Mario De La Rosa, DEPR, co-chaired **NIDA's Hispanic Initiative Meeting** on December 12-13, 1995 in Rockville, Maryland.

Andrea Kopstein, DEPR, presented a paper at the **1995 Annual Meeting of the American Public Health Association** in San Diego, October 29-November 2, 1995, that explored the co occurrence of multiple deviant behaviors with the use of marijuana and cocaine. This study, based on data from the National Household Survey on Drug Abuse, focused on physically aggressive activities (fights, use of weapons, etc.) and arrest records and examined these behaviors in relation to drug use and according to race/ethnicity, poverty status, and dropout status.

Dr. James Colliver, DEPR, presented a paper on racial/ethnic differentials in initiation and continuation of drug use at the **1995 Annual Meeting of the American Public Health Association** in San Diego, October 29-November 2, 1995. This paper used survival analysis of retrospectively reported age at first use data from the 1991-1993 National Household Surveys on Drug Abuse to examine onset of marijuana and cocaine use among whites, African Americans and Hispanics differentiated by cohort.

Mr. Nicholas Kozel, DEPR, chaired the biannual meeting of the **Community Epidemiology Work Group (CEWG)** which was held in Honolulu, Hawaii, December 5-8, 1995.

Richard Needle, Ph.D., M.P.H., Chief, Community Research Branch, DEPR, participated as a workshop panelist in **"Preventing HIV Infection Among Drug Injectors: The Role of Sterile Syringes and Substance Abuse Treatment,"** sponsored by the **Association of State and Territorial Health Officials** in Alexandria, Virginia, December 4-5, 1995.

Peter Hartsock, Ph.D., of the Community Research Branch, DEPR, gave a presentation on NIDA's AIDS modeling program and its utility for research on geographic and sociobehavioral dispersion of HIV/AIDS and other new and re-emerging diseases, at the **Conference on Human Health and Global Climate Change**. The conference, sponsored by the White House Office of Science and Technology Policy and the Institute of Medicine, was held at the National Academy of Sciences in Washington, D.C., on September 11-12, 1995.

Dr. Ro Nemeth-Coslett represented DEPR's Prevention Research Branch on January 8, 1996 at the **National Technical Assistance Meeting for Historically Black Colleges and Universities participating in the Drug Abuse Research Technical Assistance Project (DARTAP)** held in Bethesda. She moderated an interactive group consultation for developing competitive drug abuse prevention research proposals.

Drs. David Gorelick and George Uhl from NIDA's DIR and NIDA grantee Dr. Mary Jeanne Kreek presented a combined clinical staff conference at the NIH Clinical Center Nov. 29, 1995, on **"Drug Abuse: Rate of Onset as a Factor in Drug Reward and Pharmacotherapies."**

Dr. Edythe D. London, DIR, presented a lecture entitled, **"Brain Imaging: Acute Responses to Stimulants and Persistent Differences in Drug Abusers Compared with Controls"** at the **Drug Abuse in the Decade of the**

Brain Conference, Houston, TX, September 22-23, 1995.

Dr. Monique Ernst, DIR, presented a lecture entitled **"Functional Brain Imaging"** at the **42nd Annual Meeting of the American Academy of Child and Adolescent Psychiatry**, New Orleans, LA, October 17-22, 1995.

Dr. James A. Bell, DIR, presented **"The Effect of MK-801 on the Expression of Morphine Tolerance in the Neonatal Rat Spinal Cord"** at the **25th Annual Society for Neuroscience Meeting**, San Diego, CA, November 11-16, 1995.

Dr. Alane S. Kimes, DIR, presented **"Radiolabeled Epibatidine: Promising Ligand for In Vivo Imaging of Central Nicotinic Acetylcholine Receptors"** at the **25th Annual Society for Neuroscience Meeting**, San Diego, CA, November 11-16, 1995.

Dr. Alexey Mukhin, DIR, presented **"NMDA Receptor Domains in Postmortem Brains of Schizophrenic Patients"** at the **25th Annual Society for Neuroscience Meeting**, San Diego, CA, November 11-16, 1995.

Dr. D. Bruce Vaupel, DIR, presented **"Varying Intravenous Rates of Morphine Administration Affects Subjective Responses of Experienced Heroin Users"** at the **25th Annual Society for Neuroscience Meeting**, San Diego, CA, November 11-16, 1995.

Dr. Monique Ernst, DIR, presented a lecture entitled **"Clinical Efficacy and Safety of Selegiline in ADHD Adults"** at the **Annual Meeting of the American College of Neuropsychopharmacology**, San Juan, PR, December 11-15, 1995.

Amy H. Newman, DIR, was invited to present a seminar entitled **"Novel Benztropine Analogs: Potent Dopamine Uptake Inhibitors without Cocaine-like Behavioral Profiles"** at the **Behavioral Pharmacology Research Unit, Johns Hopkins University**, February 1996.

Jane Acri, DIR, was invited to present a seminar entitled **"Diazepam-insensitive Benzodiazepine Receptors and Behavior"** at the **Behavioral Pharmacology Research Unit, Johns Hopkins University**, December 1996.

Ken Alling, DIR, has been invited to present a seminar entitled **"The Discriminative Stimulus Effects of Dopamine D3 Agonists"** at the **Department of Psychiatry and Human Behavior, University of Mississippi Medical Center**, February 1996.

Jonathan L. Katz, DIR, has been invited to present a seminar entitled **"Heterogeneity of Actions at the Dopamine Transporter and their Relation to Cocaine Abuse"** at the **Department of Pharmacology, George Washington University School of Medicine**, February 1996.

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

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

Director's Report to the National Advisory Council on Drug Abuse
February, 1996

Media and Education Activities

Secretary's Marijuana Prevention Initiative Support

In support of the Secretary's Initiative, NIDA's new marijuana videotape and two new marijuana brochures for parents and teens were distributed to every school district in the country (16,000) and they are now being actively marketed to the general public and television broadcasters.

NIDA also funded the production of educational posters by the **Weekly Reader** for elementary and high school students and teachers, in English and Spanish, on the dangers of marijuana use. These posters also contain a message from the Secretary and have been distributed to 235,000 classrooms across the country.

NIDA helped fund the production of two anti-marijuana television public service announcements by the Media Advertising Partnership for a Drug Free America. The ads, targeting young teens, were released in December. They are also being supplemented with a number of print ads for parents and teens, all of which market our booklets and video.

Press Conference

December 15, 1995: Secretary Shalala released findings from the Monitoring the Future (MTF) Survey, funded by NIDA for the past 21 years. For 1995, MTF showed both a continued increase in drug use and a decrease in its perceived harmfulness. The Secretary challenged all parents and caring adults to open a dialogue about the harmfulness of drugs, alcohol, and tobacco with this "generation at risk." Other press conference speakers were Dr. Lee Brown, former Director of ONDCP; Deputy Secretary of Education Madeleine Kunin; Lloyd Johnston, principal investigator; and Vicki Rafel, National PTA Health & Welfare Commissioner.

Press Releases & Media Advisories

- *September 19, HHS Press Release*, **Statement by Philip R. Lee, M.D., HHS Assistant Secretary for Health** In response to the release of the Institute of Medicine report, **Preventing HIV Transmission: The Role of Sterile Needles and Bleach**, Dr. Lee emphasized that HIV transmission through injection drug use is a significant part of the AIDS epidemic, and that the needle exchange programs being carried out in 77 communities in 20 States are viewed by the Public Health Service as opportunities to learn more about the effects of such efforts. NIDA assisted in the preparation of the press release, and responded to a number of related media inquiries.
- *October 18*, **National Drug Institute Makes Plea to Entertainment Industry that Drug Addiction be Depicted Accurately** NIDA Director, Dr. Alan Leshner, invited by the Entertainment Industries Council to speak before their Depiction Committee, stressed the need for and social responsibility of the industry to help convey an accurate view of drug abuse and addiction.

  Dr. Leshner emphasized that perceptions on drug abuse and addiction as public health problems and social issues have not kept pace with knowledge gained from advances in science on the nature and treatment of abuse and addiction.

- *October 30*, **Research Units Open to Evaluate Medications for the Treatment of Cocaine and Heroin Addiction** NIDA and the Department of Veterans Affairs have established a network of Substance Abuse Medication Development Research Units (MRDUs) at VA Medical Centers in Boston, Cincinnati, New York/Northport, Philadelphia, and West Los Angeles. The clinical research conducted at the MRDUs will focus on identifying and developing medications to treat cocaine addiction and its health consequences.
- *November 15*, **Study Shows Long Term Negative Consequences of Prenatal Exposure to Phenobarbital** Men prenatally exposed to phenobarbital have significantly lower intelligence scores than those not exposed during their mother's pregnancy, according to Dr. June Machover Reinisch and colleagues at Indiana University's Kinsey Institute for Research in Sex, Gender, and Reproduction. Although Dr. Reinisch's study involves a legally prescribed drug, the findings highlight the profound effects of prenatal drug use on the health and development of children. Findings from the study, which was funded in part by NIDA, were published in the November 15, 1995 issue of JAMA.
- *November 30*, **New Brain Neurotransmitter Discovered** "Orphanin FQ," a previously unknown neuropeptide in the brain, was discovered by NIDA-funded scientists at Oregon Health Science University in collaboration with researchers in Switzerland. Orphanin FQ may represent a whole new class of neurotransmitters that seem similar to opioid drugs, but do not function like them. Orphanin FQ is a neurotransmitter that turns on a recently discovered opioid receptor that is related to the targets of heroin and morphine action, but which had very little affinity for most opiate drugs. According to Dr. Leshner, "This discovery opens a new line of research and begins to elucidate receptor systems extending beyond those for the classical opiate drugs." The findings were reported in the November 3, 1995 issue of **Science**.
- *December 14*, **Immunization Found to Effectively Block Effects of Cocaine** Researchers Janda, Carrera, and Koob at The Scripps Research Institute prevented cocaine from entering the brain when rats were "vaccinated" with a substance that triggers the body to produce antibodies to cocaine. The compound was designed so that the antibodies produced would respond specifically to the cocaine molecule yet not affect normal brain chemistry. The researchers found a greater than 70% reduction in cocaine in the brains of rats inoculated with the compound as compared to the group not inoculated. The findings were reported in the December 14, 1995 issue of **Nature**.

NIDA EXHIBITS

In the past several months NIDA has exhibited at the following meetings:

- **9th Annual Hispanic Association of Colleges and Universities** - October 1-3, 1995, New York, NY.
- **Annual Meeting of the National Association of Social Workers** - October 12-15, 1995, Philadelphia, PA.
- **American Academy of Child and Adolescent Psychiatry** - October 17-22, 1995, New Orleans, LA.
- **Expanding Role of Neurobiology in Addiction Medicine** - October 19-21, 1995, Washington, D.C.
- **American Public Health Association** - October 29-November 2, 1995, San Diego, CA.
- **National Methadone Conference** - November 1-4, 1995, Phoenix, AZ.
- **Community Anti-Drug Coalition of America-National Leadership Forum** - November 2-4, 1995, Washington, D.C.
- **Association of Medical Education and Research in Substance Abuse** - November 9-11, 1995, Washington, D.C.
- **Society for Neuroscience Annual Conference** - November 11-16, 1995, San Diego, CA.
- **National Perinatal Association** - November 16-19, 1995, Crystal City, VA.

Planned Meetings

A meeting of data analysts from **NIDA's Cooperative Agreement for AIDS Community Based Outreach/Intervention Research Program** will be held in February to identify appropriate HIV risk variables and computer code libraries for use across multiple HIV intervention sites.

NIDA will co-sponsor the North Carolina Governor's Institute on Alcohol and Substance Abuse regional conference entitled **"Advancing Substance Abuse Treatment: Applying Current Research."** Other co-sponsors include Virginia Commonwealth University, the Medical University of South Carolina, Bowman Gray School of Medicine, and the American Society of Addiction Medicine. This conference will be held on February 14-16, 1996 at the Holiday Inn Four Seasons hotel in Greensboro, N.C. Program faculty include the following NIDA staff who will be making presentations: Roger Brown, Ph.D.; Dorynne Czechowicz, M.D.; and Cora Lee Wetherington, Ph.D. Dorynne Czechowicz, M.D.,TRB, DCSR has represented NIDA on the Conference Planning Committee.

On February 26, NIDA will be convening a **Health Services Research Planning Meeting with State Alcohol and Drug Abuse Directors** at the Bethesda Marriott Hotel in Bethesda, Maryland. This meeting will be the latest in a series of meetings we have sponsored to help shape NIDA's research agenda. The purpose is to solicit innovative research ideas and strategies in a particular area of drug abuse research by inviting participants to think broadly and expansively. For this meeting, we are specifically interested in obtaining the input of State Alcohol and Drug Abuse Directors about what health services research issues NIDA needs to address, what questions need to be answered, and how NIDA can make the results of our health services research program useful and easily accessible.

Staff of NIDA's Services Research Branch, DCSR are planning a conference with the National Institute of Justice on **Research Strategies for Treatment Drug Courts** (scheduled for February/March 1996).

Staff of the Services Research Branch, DCSR, and other NIDA staff and grantees, will conduct a half-day symposium on Drug Abuse **Managed Care Research** on June 9, at the annual meeting of the **Association for Health Services Research** (Atlanta, GA June 9-11).

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

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

Director's Report to the National Advisory Council on Drug Abuse
February, 1996

Publications

Drug Abuse Among Racial/Ethnic Minorities NCADI #BKD180
Discusses the nature of drug abuse among minorities by summarizing from a variety of surveys the most current data available on this issue. Data are presented on the prevalence, morbidity, mortality, and adverse consequences of drug use among racial/ethnic populations.

Hair Testing for Drugs of Abuse: International Research on Standards and Technology NCADI #BKD181
Provides an overview of the state-of-the-art research and results related to some of the more controversial aspects of hair analysis for drugs of abuse.

Remotely Science -Video & Teacher's Packet NCADI #PHD715 (packet), NCADI #VHS49 $8.50 (video)
The "Remotely Science" video, shows elementary school students that addiction research is exciting and fun. The teacher's packet, designed to accompany the video, contains 1 teacher's guide and 50 full-color student magazines. The magazine is a useful tool to help teach students about the effects of drugs on the brain by providing fun activities to help students find answers to questions that arise from the video. The 12-page teacher's guide gives suggestions on how to use the video and the magazine with students.

National Survey Results from the Monitoring the Future Study, 1975-1994: Vol I NCADI #BKD179
A compilation of data on drug abuse by the Nation's 8th, 10th, and 12th grades, comparing data from 1975 through 1994. Discusses the prevalence and impact of drug abuse among secondary school students.

Research Monographs

Membranes and Barriers: Targeted Drug Delivery - Research Monograph 154 (1995) NCADI #M154
Discusses the ability of drugs to effectively cross the various membrane barriers and reach the receptors which allow the drugs to produce biological effect(s). Discusses the modern drug design techniques that now make it possible to design drugs that are selectively delivered to a specific target. Mechanisms of drug transport are also discussed in terms of prodrugs, stable drugs, peptidomimetics, etc.

Reviewing the Behavioral Science Knowledge Base on Technology Transfer - Research Monograph 155 (1995) NCADI #M155
Discusses comprehensive approaches to technology transfer from several disciplines, including behavioral science. Discusses the development of technology transfer strategies, setting them in the larger context of partnership efforts with community constituencies and overall changes in health care and information technology.

Adolescent Drug Abuse: Clinical Assessment and Therapeutic Interventions - Research Monograph 156 (1995) NCADI #M156
Presents an overview of clinical assessment procedures, service delivery strategies, and therapeutic interventions designed specifically for youth. Special attention is given to drug-related medical problems, cultural issues, and family involvement.

Qualitative Methods in Drug Abuse and HIV Research - Research Monograph 157 (1995) NCADI #M157

Reviews current applications of qualitative methods in drug abuse and HIV/AIDS prevention research. Emphasis is on the use of innovative ethnographic methods of accessing hidden populations, target sampling, identifying drug use and HIV/AIDS risk behaviors, developing culturally appropriate risk reduction messages, implementing interventions, and evaluating program results.

Biological Mechanisms and Perinatal Exposure to Drugs - Research Monograph 158 (1995) NCADI #M158
Reviews the current research findings in the area of perinatal exposure to abused drugs and its impact on various biological systems during the developmental period.

Dr. Meyer Glantz published a description of an innovative substance abuse treatment for use with the elderly in **"Cognitive Therapy with Elderly Alcoholics"** in T. Beresford and E. Gomberg (Eds.), Alcohol and Aging, New York: Oxford University Press, 1995.

The entire December 1995 issue of Neuropsychopharmacology (Volume 13, Number 4) was devoted to the publication of 8 peer reviewed articles which were engendered by 12 presentations at the October 1994 NIDA/Medications Development Division (MDD). **The effects of NMDA receptor antagonists on opiate tolerance and withdrawal** is summarized.
Drs. Herman, Vocci, and Bridge of MDD contributed an article entitled **"The Effects of NMDA Receptor Antagonists and Nitric Oxide Synthase Inhibitors on Opioid Tolerance and Withdrawal"**.

Li, Shou-Hua; Chiang, Nora C.; Tai, Betty C.; Marschke, Charles K.; Hawks, Richard L. **"Quantitative vs. Qualitative Urinalysis for Benzoylecgonine in Clinical Trials for the Assessment of Cocaine Use"** Psychopharmacology Bulletin, pp. 671-679, December, 1995.

Margolin, Arthur; Kosten, Thomas R.; Avants, S. Ketty; Wilkins, Jeffry; Ling, Walter; and Beckson, Mace; Arndt, Isabelle; Cornish, James; Li, Shou-Hua; Bridge, Peter, and Ascher, John A., **"A Multi-Center Trial of Buproprion for Cocaine Dependence in Methadone Maintained Patients"** Drug and Alcohol Dependence, pp. 125-131, December, 1995.

Pilotte, NS, Sharpe, LG, Rountree, SD & Kuhar, MJ, **"Cocaine Withdrawal Reduces Dopamine Transporter Binding in the Shell of the Nucleus Accumbens"**. Synapse, 22: pp. 87-92, 1996.

Healy TEJ, Cohen PJ. **"A Practice of Anaesthesia"**, Edward Arnold, London.

Dr. Peter Hartsock published a letter to the editor in the November, 1995 American Journal of Public Health dealing with syringes in eastern Europe.

Dr. Harry Haverkos published an article entitled **"Identifying Substance Abuse in Primary Care"** in the American Family Physician, 52: pp. 2029-2035, 1995.

Dr. Jack Henningfield published a review of **"Nicotine Medications for Smoking Cessation"** in the November edition of the New England Journal of Medicine.

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

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

Director's Report to the National Advisory Council on Drug Abuse
February, 1996

Staff Highlights

Staff Changes

Ms. Susan L. David, chief of OSPC's Public Information Branch (PIB), has accepted a new position in the Office of the Director, DEPR, effective in November 1995. Ms. David, who recently received her Masters of Public Health from Johns Hopkins University, will be involved in public health and communications research as they relate to drug abuse and HIV/AIDS. Ms. David will represent the Division in collaborative activities with public and private sector organizations, coordinate preparation of research reports and information for DEPR, and work with OSPC in efforts to expand dissemination of research findings and facilitate adoption of research results in practice and policy.

Dr. Chiiko Asanuma joined the Etiology and Clinical Neurobiology Branch, DCSR in November, 1995. Prior to coming to NIDA, Dr. Asanuma was a Senior Staff Fellow at the National Institute of Mental Health where she conducted neuroanatomical studies on the structural organization of the mammalian thalamus and its relation to thalamic gating functions.

Peter J. Cohen, M.D., J.D., has joined NIDA's Medications Development Division as a Special Expert to evaluate medical, ethical, legal and political policy issues which confront the Medication Development Division as it fulfills its mandate of initiating and coordinating its research and development. Dr. Cohen has held positions as Professor and Chairman of the Department of Anesthesiology at the University of Michigan Medical Center and at the University of Colorado Medical Center and as Professor of Anesthesiology at the University of Pennsylvania Medical Center. He is also a recent graduate of the Georgetown University School of Law.

Mr. Tom Vischi of SRB has been participating in the DHHS Secretary's Working Group on Managed Care which is planning a National Leadership Conference on Managed Behavioral Healthcare, to be chaired by the Secretary in the spring of this year. Mr. Vischi is currently on detail to the Assistant Secretary for Planning and Evaluation to help coordinate this Initiative.

Dr. Peter Delany, DCSR, was deployed with the PHS Disaster Medical Assistance Team as Chief Professional Officer for the Mental Health Team during Hurricane Marilyn (Sept/Oct 1995).

Dr. Gregory Agoston joined NIDA's Division of Intramural Research (DIR) as an IRTA fellow in August, 1995.

Dr. Stephen Husbands joined NIDA's DIR as a visiting fellow in September, 1995.

Dr. Paul Kunko joined NIDA's DIR as an IRTA Fellow in August, 1995.

Awards

Following is a list of employees who were recognized at the 1995 NIDA Annual Awards Ceremony. Award categories include the NIDA Director's Award of Merit, EEO Awards, Commissioned Corps Awards, and 30 Year Service Awards.

1995 NIDA Director's Award of Merit

Mary Affeldt, Administrative Services, Division of Intramural Research

For dedication, contributions, and support to career enhanced opportunities for NIDA employees.

Khursheed Asghar, Ph.D., Basic Sciences Review Branch, Office of Extramural Program Review
For dedication, contributions, and outstanding effort in managing the review of a record-breaking number of grant applications for initial review during the summer of 1995.

Jamie Biswas, Ph.D., Chemistry & Pharmaceutics Branch, Medications Development Division
For outstanding leadership in establishing a contract-based medicinal chemistry program to accelerate the discovery of cocaine addiction medications.

James Colliver, Ph.D., Epidemiology Research Branch, Division of Epidemiology and Prevention Research
For outstanding performance on the maintenance and improvement of the Institute's vulnerability/resiliency research program.

Katherine Davenny, M.P.H., Clinical Medicine Branch, Division of Clinical and Services Research
For initiating and promoting a number of pivotal efforts of NIDA's HIV/AIDS program.

Barbara H. Herman, Ph.D., Clinical Trials Branch, Medications Development Division
For leadership in developing an innovative clinical program for drug discovery in the area of medications for the treatment of opiate addiction.

Coryl Jones, Ph.D., Epidemiology Research Branch, Division of Epidemiology and Prevention Research
For exceptional achievements in the development and maintenance of a high quality women's program and a human development program.

Cathrine Sasek, Ph.D., Science Policy Branch, Office of Science Policy and Communications
For outstanding leadership and vision in coordinating NIDA's Science Education Program.

Diana Souder, Scientific Review Branch, Office of Extramural Program Review
For assisting the program staff of the Division of Basic Research with files, reports, data and information in an extremely timely fashion.

Deborah Wertz, Grants Management Branch, Office of Planning and Resource Management
For providing guidance to program staff and demonstrating impressive knowledge of grants policies and procedures.

Berhane Yitbarek, Management Analysis and Services Branch, Office of Planning and Resource Management
For dedication, contributions, and support in providing service to NIDA staff

NIDA Director's Award of Merit -- Group Awards

Equal Employment Opportunity Office

For efforts in support of EEO and Affirmative Action at NIDA.

Carolyn Knight, Equal Opportunity Assistant
Rosemary Pettis, EEO Officer

Consortium on Minority Concerns

For efforts to increase representation by minority scientists in NIDA's research programs.

Lula Beatty, Ph.D., Special Populations Office, Office of the Director, NIDA
Mona Brown, Public Information Branch, Office of Extramural Program Review
Timothy Condon, Ph.D., Office of Extramural Program Review
Mario de la Rosa, Ph.D., Community Research Branch, Division of Epidemiology and Prevention Research
Pamela Goodlow, Special Population Office, Office of the Director, NIDA
Jack Henningfield, Ph.D., Clinical Pharmacology Branch, Division of Intramural Research
Jagjitsing Khalsa, Ph.D., Clinical Medicine Branch, Division of Clinical and Services Research
Arnold Mills, Community Research Branch, Division of Epidemiology & Prevention Research
Catherine Mills, Grants Management Branch, Office of Planning and Resource Management
Rosemary Pettis, Office of Equal Employment Opportunity Office, Office of the Director, NIDA
James Terrill, Pharmacology and Toxicology Branch, Medications Development Division
Pushpa Thadani, Basic Neurobiology and Biological Systems Research Branch, Division of Basic Research

Neuron Seminar Series Task Group

For efforts to bring together staff from all NIDA extramural scientific components to promote awareness of neuroscience.

Beth Babecki, Office of the Director, Division of Basic Research
Roger Brown, Ph.D., Behavioral Neurobiology Branch, Division of Basic Research
Joseph Frascella, Ph.D., Clinical Etiology and Neurobiology Branch, Division of Clinical and Services Research
Harold Gordon, Ph.D., Etiology and Clinical Neurobiology Branch, Division of Clinical and Services Research
Arthur M. Horton, Ed.D., Etiology and Clinical Neurobiology Branch, Division of Clinical and Services Research
Theresa Lee, Ph.D. Basic Neurobiology and Biological Systems Research Branch, Division of Basic Research
Dorota Majewska, Ph.D., Pharmacology and Toxicology Branch, Medications Development Division

National Marijuana Conference Federal Planning Committee

For providing a unique opportunity to share science-based information about the prevention, treatment, and consequences of marijuana use in a manner understandable to the educated lay public.

Lula Beatty, Ph.D., Special Populations Office, Office of the Director, NIDA
Mona Brown, Public information Branch, Office of Science Policy and Communications
Timothy Condon, Ph.D., Science and Policy Branch, Office of Science, Policy and Communications.
Susan David, Public Information Branch, Office of Science, Policy and Communications
Lynda Erinoff, Ph.D., Behavioral Sciences Research Branch, Division of Basic Research
Leona Ferguson, Public Information Branch, Office of Science, Policy and Communications
Meyer Glantz, Ph.D., Office of the Director, Division of Epidemiology and Prevention Research
Stephen Heishman, Ph.D., Clinical Pharmacology Research Branch, Division of Intramural Research.
Jagjitsing Khalsa, Ph.D., Clinical Medicine Branch, Division of Clinical and Services Research
Sheryl Massaro, Public Information Branch, Office of Science, Policy and Communications
Richard Millstein, Office of the Director, NIDA
Elizabeth Rahdert, Ph.D., Treatment Research Branch, Division of Clinical and Services Research
Rao Rapaka, Ph.D., Basic Neurobiology and Biological Systems Research Branch, Division of Basic Research
Richard Sackett, Public Information Branch, Office of Science, Policy and Communications
Zili Sloboda, Sc.D., Office of the Director, Division of Epidemiology and Prevention Research
Donald Vereen, M.D., Office of the Director, NIDA **Frank Vocci, Ph.D.**, Medications Development Division

EEO Awards

Jack Henningfield, Ph.D., Clinical Pharmacology Research Branch, Division of Intramural Research
For ongoing commitment and work in support of EEO and affirmative action within NIDA.

Arthur M. Horton, Ed.D., Etiology and Clinical Neurobiology Branch, Division of Clinical and Services Research
For leadership in organizing the NIDA Equal Employment Opportunity Advisory Committee.

Richard A. Millstein, Office of the Director, NIDA
For leadership in the creation of the NIDA EEO Advisory Committee and consistent support of EEOAC recommendations and efforts.

Commissioned Corps Awards

Robert Battjes, D.S.W., Division of Clinical and Services Research
For outstanding leadership as Acting Director of the Division of Clinical and Services Research.

Janice Carico, Medical Affairs Branch, Division of Intramural Research
For outstanding and sustained performance of duty as a Clinical Nurse Specialty Consultant.

Raquel Crider, Ph.D., Clinical Epidemiological and Applied Sciences Review Branch, Office of Extramural Program Review
For sustained high quality performance during a period of rapid increase in the workload in diverse areas of science while maintaining the integrity of peer review.

Peter Delany, D.S.W., Services Research Branch, Division of Clinical and Services Research
For significant scientific contributions to the development of NIDA's program of health services.

Daniel Mintz, Clinical Epidemiological and Applied Sciences Review Branch, Office of Extramural Program Review
For sustained high quality performance during a period of rapid increase in the workload in diverse areas of science while maintaining the integrity of peer review.

Paul Na, Medical Affairs Branch, Division of Intramural Research
For outstanding performance of duty in the development, implementation and training of the pharmacy staff with a new multi-functional pharmacy computer program.

Kesinee Nimit, M.D., Clinical Epidemiological and Applied Sciences Review Branch, Office of Extramural Program Review
For sustained high quality performance during a period of rapid increase in the workload in diverse areas of science while maintaining the integrity of peer review.

30 Year Service Awards

Ann Blanken, Office of the Director, Division of Epidemiology and Prevention Research
Helen Cesari, Community Research Branch, Division of Epidemiology and Prevention Research
Nancy Hurd, Contracts Management Branch, Office of Planning and Resource Management
Catherine Mills, Grants Management Branch, Office of Planning and Resource Management
Heinz Sorer, Ph.D., Pharmacology and Toxicology Branch, Medications Development Division.

Other Awards

Dr. Peter Delany, DCSR, received a PHS Citation for a special assignment to the Office of Extramural Program Review as Scientific Review Administrator of the Health Services Research Center RFA (October, 1995).

Dr. Jack Henningfield of NIDA's DIR was awarded the 1996 American Society of Addiction Medicine Annual Award "for expanding the frontiers of the field of Addiction Medicine and broadening our understanding of the addictive process, through research and innovation." The award will be conferred at the Society's Annual Awards Luncheon on April 20, 1996.

Sharyn B. Greberman, Sc.D., M.H.S., guest researcher in Pharmacotherapy Section (former IRTA fellow), has been awarded a short-term fellowship by NIH Fogarty International Center to conduct a research project at the Japanese National Institute of Mental Health, "A Framework for the Evaluation of Substance Abuse Treatment." Dr. Greberman will be collaborating with Dr. Kiyoshi Wada, a former guest researcher in the Section several years ago. Dates of the fellowship are March 15-May 15, 1996.

Dr. Lula Beatty, Chief of NIDA's Special Populations Office, was elected president of the Section on the Psychology of Black Women, Division 35, Psychology of Women, American Psychological Association.

Dr. Cora Lee Wetherington, Program Officer, Behavioral Sciences Research Branch (DBR) & Women's Health Coordinator, was elected Fellow of the American Psychological Association, Division 28: Experimental Analysis of Behavior.

Grantee Honors

NIDA grantee **Dr. Edward Kaplan** of Yale University received the prestigious Lanchester Prize for Best Publications in Operations Research on October 31, 1995. The prize was awarded to Dr. Kaplan in recognition of his publications from the first Federally-funded needle exchange research program, which was sponsored by NIDA.

[Office of the Director][Report Index]

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