ALCOHOL, DRUG ABUSE, AND MENTAL HEALTH

# ADAMHA NEWS

## AXELROD HONOR SYMPOSIUM

After nearly three decades of serving in the same job, working in the same room, sitting in the same chair, standing at the same laboratory bench, Dr. Julius Axelrod is making a few changes this year. NIMH's Nobel-prize-winning neuropharmacologist is "retiring"—on paper only, to be sure—and moving his research projects into more modern facilities just across the street.

It is testimony to Axelrod's immense scientific impact that hundreds of brain scientists from around the world flocked to the NIH campus on fairly short notice May 31-June 1 to attend a symposium held in his honor on "Mechanisms of Synaptic Regulation." Most had at one time or another worked in Axelrod's lab.

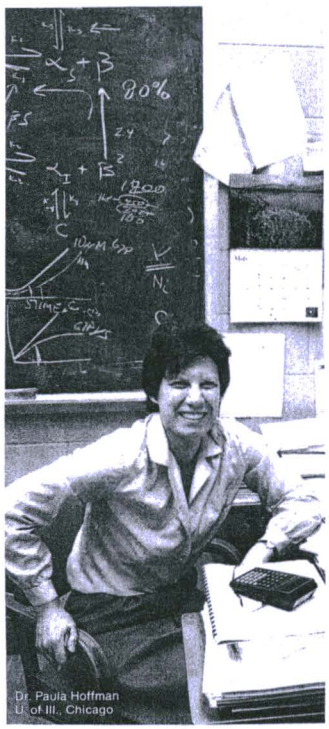
At a banquet culminating the event, Dr. Donald Macdonald, ADAMHA Administrator-designate, observed that the ingathering of Axelrod's associates was like a large family's celebration of its father.

At the symposium, interspersed with their scientific presentations, Axelrod's clan talked about what they had learned from him. Dr. Solomon Snyder of The Johns Hopkins University emphasized the "simple elegance" in the design of experiments which is a hallmark of the Axelrod tradition. Such experiments make doing science "a lot of fun," he added.

Several participants pointed to Axelrod's career itself as a model of directness and simplicity. In certain respects, it may rank among the most conservative in the history of Federal service—yet he has revolutionized understanding of the brain. He focused his energies on the substance of science and the training of young investigators and seldom got sidetracked by bureaucratic or administrative concerns. His path to the Nobel honor represents an exception to all the conventional "rules" for how to succeed in government and science. He didn't make his mark before age 30 and has shown an uncanny knack for outwitting the Peter Principle.

Unable to get into medical school because of quotas in pre-World-War-II America, young Axelrod worked for a pharmaceutical firm as a master's degree chemist during the 1940s. In his first scientific paper with his mentor, Dr. B.B.

*see SYMPOSIUM p. 2*



Dr. Paula Hoffman
U. of Ill., Chicago

a special report

ADAMHA women in science NEWS

## MACDONALD APPOINTED

The White House has announced the appointment of Donald Ian Macdonald, M.D. as the fourth Administrator of the Alcohol, Drug Abuse, and Mental Health Administration.

## ALCOHOL, DRUGS, AND SAFETY

In a major policy move, NIAAA Director Robert Niven has announced that the Institute will lead a national drive against "alcohol- and drug-related trauma," with the aim of helping to reduce the Nation's accidental deaths and injuries.

The new project, a major expansion of the Institute's accident prevention activities, will be conducted in cooperation with the National Institute on Drug Abuse. The Departments of Transportation and Defense and other concerned Federal agencies also will be invited to participate, as will the insurance and automobile industries and other private sector groups with safety interests.

Niven has named Jeanne Trumble, a senior staff member, as NIAAA's director of alcohol and safety projects.

"Accident Prevention and Injury Control" is one of 15 Public Health Service priorities to be achieved by the year 1990. The HHS *Objectives for the Nation* highlight the problem and the need to develop techniques to reduce the Nation's accidental deaths and injuries.

"Despite the variety of settings in which accidents occur, a common thread is the frequency with which alcohol and other drugs are involved," Niven said.

He pointed out that most Americans have become more aware of the dire results in deaths and injuries from drinking and driving, but few realize that alcohol use is also implicated in many other types of accidents, as well as crimes, suicides, and family violence.

"Between one-third and one-half of all adult Americans involved in accidents, crimes, and suicide had been drinking alcohol," Niven said. "While accidents will and do happen, the prevalence of alcohol use in such a high percentage of them indicates they might be reduced in number and severity through well-organized private and public action.

"For example, new laws and law enforcement, and new developments in science and technology, have already helped to reduce drunk-driving accidents nationwide. Establishing a single focus in government to promote participation among key organizations, and developing programs that draw

*see ALCOHOL p. 7*

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

July 1984 Volume X Number 7

• National Institute on Alcohol Abuse and Alcoholism • National Institute on Drug Abuse • National Institute of Mental Health

# SYMPOSIUM: SYNAPTIC REGULATION

by Jules Asher

*from p. 1*

Brodie, Axelrod reported acetaminophen's ability to relieve pain without the side effects associated with aspirin. This work ultimately led to a multimillion dollar industry ("Tylenol," etc.).

After a few years at the National Heart Institute, where he discovered an important chemical reaction by which substances like amphetamine are metabolized in the body, Axelrod asked for a raise and was told he couldn't go beyond his GS-12 salary level without a doctorate. "So I took a year off and got a Ph.D.," he quipped in his deadpan way.

After this stint at George Washington University, at age 43, he joined NIMH's Laboratory of Clinical Science as chief of its new Section on Pharmacology. Axelrod stayed in that same position from 1955 until this year, retiring as a GS-18.

By the early 1960s, he had made the discoveries about neurotransmitter metabolism for which he was later awarded the Nobel prize. It had been widely assumed up to that time that neurotransmitters (chemical messengers) are cleared from synapses (spaces between brain cells) by enzymes, as is the case with acetylcholine. Axelrod found that the neurotransmitter noradrenalin is also actively transported back into the secreting neuron and re-utilized for subsequent nerve impulses. Despite initial incredulity within the field, it is now taken for granted that this "re-uptake" process represents the rule rather than the exception in neural communication.

*Above: Axelrod receiving the Nobel Prize in Medicine, Stockholm, 1970; Left: Axelrod portrait by late neuroscientist colleague Earl Usdin; Lower right: At banquet reception, Axelrod confers with Dr. Solomon Snyder and Dr. Joseph Cochin.*

In the course of their investigations on how noradrenalin is broken down and used in the body, Axelrod and colleagues determined that antidepressants block the re-uptake process, suggesting a mechanism of action for these drugs in the brain. They also discovered MHPG, a byproduct of the metabolic breakdown of such catecholamine neurotransmitters, which can be found and measured in body fluids, and affords an important chemical "window" on brain activity. Axelrod's most recent work centers on the interaction of hormones in the regulation of the stress response (see *ADAMHA News*, 9/2/83).

In his new status as guest worker, Axelrod has joined the NIMH Laboratory of Cell Biology, headed by one of his former students, Dr. Michael Brownstein. He says he plans to continue his studies, take advantage of opportunities for consultation to foundations and industry, and generally have a great "third act."

## AXELROD BANQUET

The 200-plus attendees at the banquet held in Axelrod's honor heard speeches by some 17 leaders from science, HHS, and policymaking circles. These included an hilarious cookbook-style spoof on how to do science a-la-Axelrod by a French researcher and former student, Dr. Jacques Glowinski. Dr. George Keyworth, Presidential Science Advisor, lauded Axelrod's prowess as a model teacher of young scientists and "warned" him that the Administration may tap his talents as it gears up scientist development efforts. The master of ceremonies, Dr. Frederick Goodwin, Intramural Research Program Director, found himself moderating some unexpected political crossfire as Missouri Senator Thomas Eagleton and former NIMH Director Herbert Pardes voiced strong appeals for improved funding of mental health research.

ALCOHOL, DRUG ABUSE, AND MENTAL HEALTH
ADAMHA NEWS

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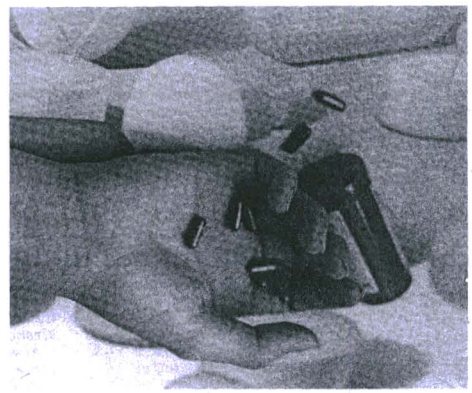
# ADOLESCENT SUICIDE: STUDIES REPORTED

by Marilyn Sargent

***The third highest cause of death in 15- to 25-year-olds is suicide. In the past 25 years, suicide among young people has increased 200 percent.***



A panel of experts at the April meeting of the American Orthopsychiatric Association in Toronto explored research findings that may help explain this shocking increase.

The estimate may even be low, because an unknown number of young deaths reported as accidents may in fact be suicides.

Dr. Jeffrey Newcorn, New York Hospital, Cornell Medical Center, suggested the increased rates of suicide among young people may be due in part to their increased numbers. However, he also pointed to one study that found up to 80 percent of suicide attempters suffer from affective disorders, whose rates are increasing among young people.

Newcorn reviewed findings on young suicide *completers* by Dr. David Shaffer, Institute of Psychiatry, London, and on suicide *attempters* by Dr. Barry Garfinkel, Bradley Hospital, East Providence, Rhode Island.

Shaffer found from coroners' records that young suicide completers were generally brighter and taller than average. Many had antisocial or depressive characteristics, and one-half were either receiving psychiatric assistance or recognized as needing assistance.

A number of the youngsters skipped school the previous day, and carefully planned the manner, place, and time of death to ensure success. Those who left notes feared school failure or a personal or peer crisis.

Garfinkel's study involved youngsters who came to a hospital emergency room after a suicide attempt, most often by drug overdose and during winter.

Prevalence of substance abuse, psychiatric and medical illnesses, and family problems distinguished the suicidal youngsters from matched controls who came to the emergency room for injuries or medical conditions. Family histories of the suicidal youngsters included high incidence of economic stress, absence of both parents (fatherless home and working mother), drug and alcohol abuse, affective disorders, and suicide attempts.

"Why do young people kill themselves? Possibly constitutional vulnerability, such as a psychiatric disorder, or developmental issues such as fear of peer rejection, or family stress," Newcorn hypothesized.

Dr. Harvey Golombek, Acting Director, C. M. Hincks Treatment Center, Toronto, reported on his studies of the relationship of depression, risk of suicide, and personality in adolescence.

He theorized that depressive behavior is expressed differently in each of three stages of adolescence. In early adolescence, depression may be manifested by anger and disorganized or erratic behavior. In mid-adolescence, a stage of rebellion, depression may be seen in exaggerated autonomy and angry outbursts. Later adolescence brings a "new sense of separateness," with disillusionment, dissatisfaction, and a sense of loss. During this period, depression is more typically expressed by feelings of sadness and guilt, and is more self-directed.

In one study, the scientists found three basic personality groups: 55 percent of the youngsters had no personality disturbance or functional problems (Group A), 30 percent had conflictual personalities and a high degree of affective disorder (Group B), and 15 percent had pervasive difficulties, showing problems in all seven areas tested, including role adequacy, psychosocial development, and ego function (Group C).

Personality characteristics remained stable over time for two-thirds of the children, and the rates of depression found in each group related to the amount of personality disturbance: 18 percent of Group A, 50 percent of Group B, and 70 percent of Group C had moderate to marked depression.

In a 1983 study that Golombek did with Garfinkel, they surveyed records of 1,500 suicide completers and 500 attempters. Confirming Shaffer's findings concerning high intelligence among completers, Golombek said better students made the most severe attempts. Only 10 percent of completers were out of school or work, while 53 percent of attempters were below expected grade level or had dropped out of school.

Golombek hypothesized that suicide completers are more apt to be the youngsters from Group A or B, particularly if an acute psychiatric illness develops, while attempters are most likely from Group C.

Adolescents with marked personality disturbance are at high risk for suicide. Those with "considerably disturbed affect are capable of good adaptation and developing good coping skills, but if faced with stress or episodic depression, may become suicidal," he concluded.

> ***"Coroner's records [showed] that young suicide completers were generally brighter . . . than average."***

All suicide attempters should receive treatment, said Dr. Estelle Schecter, Cornell University Medical College. Between 30 and 50 percent will repeat the attempt.

If parents are to be involved in the therapeutic process, and they should be, said Schecter, involvement should begin while the youngster is still in the emergency room. Once the youngster leaves the hospital, parents are not as highly motivated to get themselves or their youngsters into treatment.

Treatment needs to be problem-focused with clearly prescribed activities. Because adolescents who attempt suicide often lack communication, social, and cognitive skills, non-directive or cognitive forms of therapy are very difficult, the experts held.

# JUVENILE DELINQUENCY AND ADM PROBLEMS by James Helsing

A 5-year study of the relationship of self-reported juvenile delinquency and ADM problems among American youth reveals that delinquency and substance abuse—even though they may be rooted in the same set of social-psychological factors—follow widely different patterns between ages 11 and 21.

The youth report fewer delinquent activities as they grow older and reach 21, while their involvement in and maintenance of substance abuse increases as they grow to young adulthood.

A small group of youths (about 9 percent of those surveyed) accounted for a majority of all crimes reported; nearly 50 percent of this group also reported multiple drug use; 24 percent had emotional problems; and 18 percent reported both serious drug abuse and emotional problems.

These findings were reported by Dr. Delbert Elliott, Behavioral Research Institute, Boulder, Colo., at a recent state-of-the-art research conference on "Juvenile Offenders with Serious Drug, Alcohol, and Mental Health Problems."

The conference was jointly sponsored by ADAMHA and the Office of Juvenile Justice and Delinquency Prevention (OJJDP), Department of Justice.

Data reported by Elliott were from a National Youth Survey conducted with support from NIMH's Center for Studies of Antisocial and Violent Behavior and from OJJDP. The findings showed:

- A large proportion of youngsters—mostly boys—are involved in delinquency as early as age 11, but this behavior drops off rapidly during late adolescence and reaches a low prevalence by age 21.
- Alcohol and drug abuse show a contrary pattern. Both are at low prevalence at age 11 but increase rapidly over the following 10-year span.

Only two types of delinquency closely associated with drug abuse—"public disorder" and "illegal services"—follow the latter pattern.

Two measures of mental health included in the survey—"emotional problems" and "social isolation/loneliness"—show little rate fluctuation between ages 11 and 21.

"The asymmetry in the relationship between delinquency and substance abuse suggests a difference in the factors associated with maintenance of these behaviors," reported Elliott.

"Types of delinquency that exhibit a general declining curve through adolescence are dominated by males," Elliott said. "As the influence of all-male peer groups declines in late adolescence and is replaced by relatively stable heterosexual relationships, social support for delinquency wanes.

"In contrast, alcohol and drug use are not strongly associated with males. Both sexes are involved in these behaviors, and both increasingly support each other in these behaviors through adolescence and early adulthood.

"A sizable proportion of the most serious delinquents are multiple problem youth," stated Elliott. "New efforts at coordination of ADM and juvenile justice resources are required if rehabilitation efforts are to become more effective."

A number of questions identified as needing study were summarized at the final session by Dr. David Hawkins, Associate Professor, School of Social Work and Center for Law and Justice, University of Washington in Seattle:

At what age should intervention begin to prevent joint development of delinquency and ADM problems? As early as preschool?

Where should intervention occur to be most effective? In the family? At school? Will prevention efforts work only if they occur within the peer group?

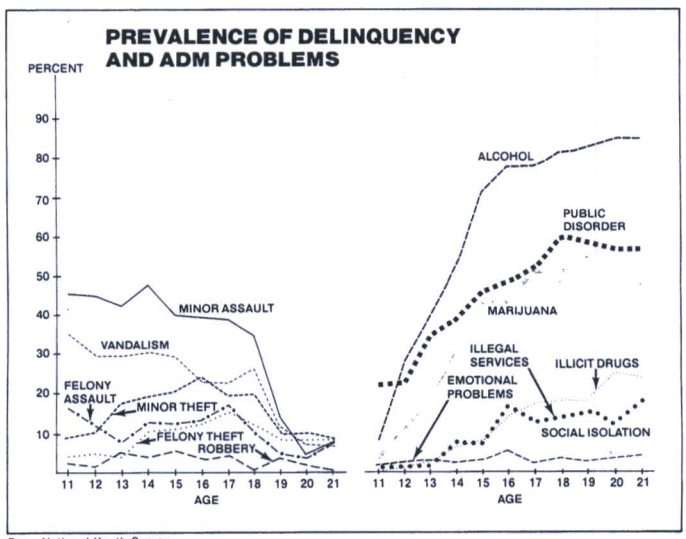
How accurately does early onset of delinquency/ADM problems predict their duration and level of seriousness?

Other priority research questions arose in response to the finding by the National Youth Survey that only 14 percent of the youths identified as "serious career offenders" had ever been arrested. If the other 86 percent are not coming to the attention of the juvenile justice system, are their problems being seen in any other systems which offer prospects for intervention? Which systems? Child welfare agencies? Community mental health centers? Alcohol or drug abuse treatment programs?

The conference was the first sponsored by ADAMHA and OJJDP under an agreement between the two agencies to improve coordination of their activities on behalf of youngsters who are involved in serious juvenile delinquency and also have serious alcohol, drug abuse, or mental health problems.

"There is growing awareness among the ADM community and the juvenile justice system that this target group has 'slipped between the cracks' and is not being reached to any acceptable extent by existing treatment and prevention services," said Deputy ADAMHA Administrator Robert Trachtenberg at the opening session. Trachtenberg also serves on the Cabinet-

*see DELINQUENCY p. 8*




*From National Youth Survey*

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# women in science—a special report

**A psychoendocrinologist in New York has found that anorexia nervosa may result from a biological vulnerability. A neuropharmacologist in California has shown that a naturally occurring opiate substance may prove useful in treating addiction. A psychopharmacologist in Chicago has linked alcohol tolerance to dopamine neurotransmitters. These scientists have several things in common: they are conducting basic research to track the biological origins of serious public health problems; their work is supported by the Institutes of the Alcohol, Drug Abuse, and Mental Health Administration; and they are women. Several projects currently underway are highlighted in this special report.**

## Dr. Dora Goldstein: How Alcohol Affects Cell Membranes

Could a special cholesterol diet be used to treat alcohol abuse? Perhaps, in light of findings by an award-winning NIAAA grantee that alcohol exerts its effects primarily by disrupting the lipid (fatty) components of cell membranes.

Dr. Dora Goldstein, a pharmacologist at the Stanford University School of Medicine, has originated a biophysical theory of alcohol abuse that netted her the second annual Award for Scientific Excellence in Alcohol Research, given by the Research Society of Alcoholism in 1981. Based on her studies over the past decade, she believes that alcohol intoxication is the result of ethanol's interference with cell membranes throughout the body, and that the membranes' adjustment to the disturbance produces alcohol tolerance and dependence.

Ethanol is one of many drugs whose potency can be predicted from their ability to dissolve into lipids. Reasoning that ethanol's primary site of action would be a lipid region of the cell, Goldstein focused on the cell membrane, a largely lipid environment. She surmised that, by its mere presence in the membrane, ethanol loosens the packing of the lipid components, which impairs the membrane's functioning.

Data from her animal studies bore her out. Low concentrations of ethanol significantly disordered membranes in brain and blood cells of mice, and higher concentrations intensified the impact.

In her search for the origin of these alterations, Goldstein first looked at cholesterol, one of the lipids which regulates membrane fluidity. She discovered that alcohol-tolerant mice sometimes have more cholesterol in their cell membranes than normal mice do; further, the tolerant membranes were rigid and showed little sensitivity to ethanol.

This correlation between the sensitivities of the animal and its cell membranes has turned up in one of Goldstein's most recent studies, which showed that mice with different inherited sensitivities to alcohol's hypnotic effects have cell membranes with parallel sensitivities to ethanol's disordering effects. In a separate project, she added cholesterol to a model of a cell membrane (which she created out of egg lecithin) and then administered ethanol. The disorder that followed was far less than normal, further evidence that "natural variations in cholesterol content may make some membranes more ethanol-sensitive than others."

Apparently, Goldstein explains, "ethanol exerts its pharmacological effects by acting . . . in a physical rather than chemical manner . . . in the sense that [its action] is more like the effects of a rise in temperature than like the binding of a small molecule with a specific receptor."

Bacteria are known to adapt to higher temperatures by changing the fatty acid composition of their cell membranes, and Goldstein sees a similar pattern in the effect of ethanol, "which closely resembles a rise in temperature." As it dissolves into the lipid fabric, ethanol expands the membrane's area and reduces its density. The membrane adapts to this change by stiffening.

The fluidity of the membrane, in Goldstein's view, probably affects the transport of essential substances through the membrane, a process that is carried out by proteins. In fact, the investigator suggests, "the anesthetic action [of ethanol] may be a direct result of the disrupted protein function."

Goldstein is currently expanding her research to determine if barbiturates and benzodiazepines disrupt cell membranes as ethanol does. She also will study an anticonvulsant drug, sodium valproate, because it resembles ethanol in its action on membranes and on the central nervous system.

To follow up on her findings of corresponding sensitivities in mice and their cell membranes, she will examine red blood cells taken from humans who have a family history of alcoholism or who are especially sensitive or resistant to intoxication.

Ultimately, Goldstein would like to know how ethanol's molecular action may generate alcohol's behavioral effects. "This drug affects virtually every organ in the body," she notes. "Perhaps the brain feels these effects first because of the urgency of its need for membrane transport, millisecond by millisecond."

**—Kate Callen**

## Dr. Hazel Szeto: How Opiate Drugs Change Fetal Behavior

In the face of evidence that even such commonly used stimulants as caffeine and nicotine can harm a developing fetus, research on how psychoactive drugs used during pregnancy might later affect a child is critical.

Dr. Hazel Szeto, a NIDA grantee at the Cornell University Medical College, has developed an animal model that describes in a simplified way how drugs are transferred from mother to fetus and finally eliminated from the total system. The model has enabled her to determine the extent of fetal exposure to three opiate drugs and to monitor fetal behavior following drug exposure.

In a comparison study of morphine, meperidine (Demerol), and methadone, Szeto has discovered that, in moderate doses, all disturb the behavioral patterns of the fetus by significantly increasing the time the fetus is active and awake. In contrast, tetrahydrocannabinol, the psychoactive component of marijuana, sedates the fetus, decreasing heart rate and breathing movements.

Szeto also found that morphine's effects on the fetus are less pronounced than the other two drugs because morphine transfers across the placenta more slowly. Thus, the fetus is exposed to one-third less morphine than the other two opiate drugs. However, even after a mere 2-hour infusion of morphine, fetuses exhibited physiological dependence as manifested by a classical withdrawal syndrome.

Sheep are used as subjects in Szeto's research because of the relatively large size of the fetus. She first created a two-compartment model, with the mother and the fetus each representing a compartment. A drug is transferred from the maternal compartment to the fetal compartment and back via the placenta, with each compartment playing its part in eliminating the drug from the total system.

Szeto then developed a method for studying fetal behavior *in utero* that allows the mother sheep to remain unsedated and move about freely. The method further enables Szeto to administer drugs directly to the fetus and monitor subsequent brain waves, body movements, and other fetal activities.

After the drugs were given, Szeto found that the fetal drug concentration was always less than the maternal drug concentration. She believes this does not result from a theoretical "placental barrier" that protects the fetus from the drugs, but occurs because the fetus, like the mother, can eliminate the drug through normal processes.

Having determined how much of the drug actually reaches the fetus through the mother, Szeto can correlate that information with the pharmacodynamics of the drug, i.e., how it actually affects the behavior of the fetus. Thus far, she has identified a daily cycle of three different behavioral states in the fetus and shown how these states are affected by drug exposure.

The first state, similar to quiet sleep in an adult, is characterized by big slow waves in the electrocorticogram, no eye movements, and an occasional body movement. The second state is similar to active sleep or rapid eye movement (REM) sleep in the adult, with rapid breathing movement and an absence of muscle tone in neck muscles. The third state represents arousal in the fetus, with intense body movements, breathing movements, and a higher heart rate.

The normal developing sheep fetus, according to Szeto, spends only about 5 percent of its time in the arousal state, with the rest of the time evenly divided between quiet sleep and active sleep. When the three opiate drugs in Szeto's study were administered to the mother, fetal behavior changed in varying degrees and different directions.

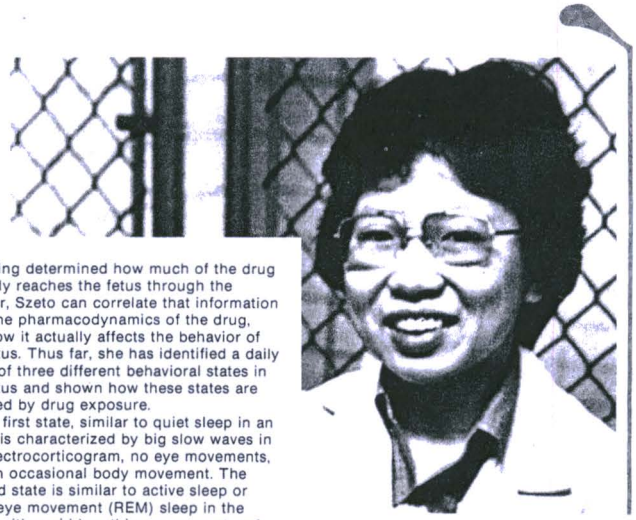
At low and moderate doses, morphine, methadone, and meperidine tended to deprive the fetus of both quiet sleep and active sleep and significantly lengthened the arousal period. In general, the fetus was more active, with more muscle movements and noticeably increased heart rate. At high doses, the drugs caused an increase in quiet sleep. In all cases, the effects of methadone and meperidine were three times greater than those of morphine because of disproportionate exposures.

Szeto also found that even a single dose of a psychoactive drug during pregnancy can alter fetal behavior. Such effects were reversible if the mother stopped drug use after the single dose.

But the effects of repeated drug use are a matter of great concern to Szeto. Her investigations are currently seeking answers to such questions as:

- Can prolonged drug use during pregnancy produce irreversible changes in fetal behavior?
- Can such changes affect development of the nervous system and alter metabolic requirements, and thus trigger abnormal behavior in the child?
- Can ingestion of certain drugs at critical periods during pregnancy cause such impairments as hyperactivity and learning disorders?

**—Lenore Gelb**



## Dr. Raquel Gur: Clues to Mental Disorders in Cerebral Blood Flow

As scientists continue to seek clues surrounding the incidence of schizophrenia and depression, they are not only finding evidence of neurotransmitter abnormalities in people suffering these disorders, but are also uncovering structural irregularities and possible abnormalities in the cerebral blood flow and in the brain's oxygen and glucose metabolism.

In a series of elegant experiments supported by the National Institute of Mental Health, Dr. Raquel Gur and her interdisciplinary team of psychologists, psychiatrists, neurologists, and pharmacologists at the University of Pennsylvania have discovered that schizophrenic patients taking antipsychotic drugs have increased blood flow to the left hemisphere of the brain. Based on this finding, Gur and her colleagues have hypothesized that the left hemisphere in schizophrenics somehow becomes overworked, and the performance of certain tasks is disrupted.

Gur's team is one of the few now using the Positron-Emission Tomography (PET) scan to determine cerebral flow as a means of comparing various psychiatric and normal patients as they perform verbal and spatial tasks. Most research has concentrated on comparing normal and psychiatric patients at rest—which shows virtually no differences between the two groups. "It is not until the system is challenged," says Dr.

# Dr. Cindy Ehlers: Can Brain Waves Tell Risk of Alcoholism?

Like many other machines, the brain runs on electrical and chemical current flows. Advanced techniques for tracking the electrical activity can help scientists determine how the brain's components operate (or don't) under given conditions.

Using this approach, Dr. Cindy Ehlers is looking for electrophysiologic "markers" that may help identify people at risk for alcohol abuse. If successful, her search may also uncover the brain mechanisms that spawn alcohol disorders.

Working with support from the National Institute on Alcohol Abuse and Alcoholism, Ehlers is conducting animal research at the Scripps Clinic and Research Foundation in La Jolla, Calif., on how alcohol affects electroencephalographic (EEG) spectra and event-related potentials (ERP). These measure brain waves produced by electrical currents that travel across neurons during "background" activity (EEG) or in response to a stimulus (ERP).

The frequency and amplitude (size) of EEG brain waves together provide an electrical picture of the corresponding state of the brain. When people are relaxed, their brain's electrical activity is typically composed of medium amplitude and regular frequency waves called alpha waves. During a state of alertness, beta waves of small amplitude and rapid frequency occur.

A sophisticated computer method she developed for recording EEG activity has helped Ehlers compare brain wave patterns among different monkeys who were administered solutions of water, low-dose ethanol, high-dose ethanol, diazepam ("Valium"), morphine, and other drugs.

Computerized readings following administration of water showed EEG spectral patterns of even amplitude and regular frequency. Readings following ethanol and drugs could each be distinguished by differences in the stability of their individual spectral patterns.

In preliminary findings, the irregular EEGs produced by high-dose ethanol and morphine seemed to resemble each other, while the low-dose ethanol patterns were similar to the irregular EEGs produced by diazepam. Similarities among these patterns suggest that a common mechanism (e.g., an endogenous peptide) may mediate the electrophysiological action of ethanol, opiates, and benzodiazephines.

As with the EEG experiments, Ehlers is gauging ethanol's specific impact on brain activity by comparing ERPs from control monkeys and from monkeys who were given alcohol.

An event that stimulates the senses, such as a bell ringing, will produce ERPs, a series of brain waves which peak or drop at different latencies (time intervals) following the stimulus. Previous studies have shown that ERP amplitudes and latencies change following acute doses of ethanol. Ehlers suspects that the most significant disruptions may occur in late ERP waves that correspond with cognitive processes.

Under certain conditions—e.g., when people drink to alleviate anxiety or reduce tension—ethanol may produce a "normalization" effect and counteract EEG changes that stress apparently triggers. Stress also is known to activate the body's brain-pituitary-adrenal axis; further, abnormalities in this axis have been linked to chronic alcohol use and depression.

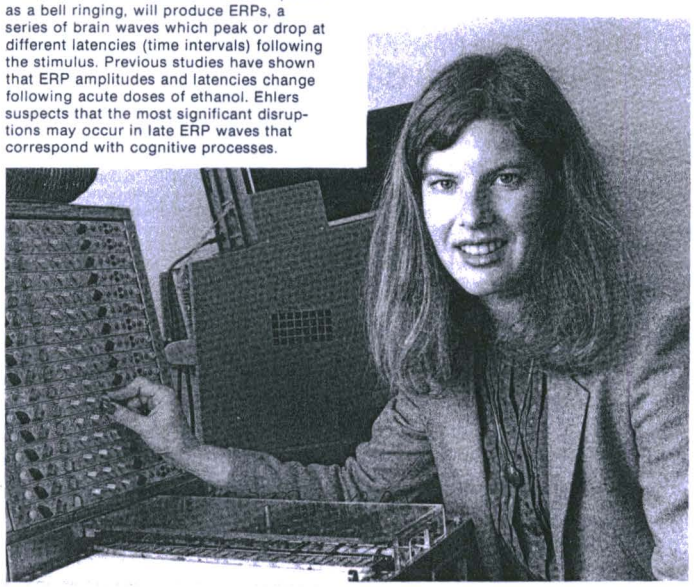
To determine whether this axis plays a role in drinking habits, Ehlers is studying how ethanol-induced EEG and ERP changes are influenced by several peptides recently isolated from the hypothalamus (a key player in pituitary action).

One such peptide is corticotropin-releasing factor (CRF), a hormone that stimulates the pituitary gland in response to stress. Ehlers' preliminary data show that CRF can vastly increase signs of arousal in rats and apparently also produces behavioral signs of stress and anxiety.

Based on these early results, she is trying to determine whether CRF might play an important role in regulating electrophysiologic states that influence alcohol use.

"We have seen scientific evidence of a genetic basis underlying alcoholism," says Ehlers, "and we know from clinical experience that a family history of alcoholism significantly increases an individual's risk of becoming alcoholic. By studying the electrical and chemical states of the brain as they are influenced by such factors as stress, we are likely to uncover the basic neural mechanisms that predispose individuals to develop alcoholism."

**—Kate Callen**



Brett Skolnick, a member of the team, "that we begin to see the subtle abnormalities between normal and psychiatric patients."

Gur and colleagues are particularly interested in explicating the relationship between brain activity and behavior. They are exploring such questions as:

- What is the relationship between structural abnormalities in the brain and functional abnormalities that characterize psychosis?
- To what extent are patterns of brain activity correlated with neuroanatomic abnormalities?
- What happens physiologically when normal, schizophrenic, and depressed people take a verbal or spatial test?
- What happens physiologically when normal individuals and psychiatric patients become angry or sad?

Gur and her team are also plowing new ground by looking at ways emotions might influence cerebral blood flow. "No one has paid much attention to the effect of emotional stimulation on cerebral blood flow," she said. Three groups of subjects—normals, psychiatric patients, and stroke victims—will be given tests on how they identify different emotions (e.g., looking at pictures of facial expressions), express different feelings, and experience different emotional states. The scientists will then measure how cerebral blood flow is affected by changes in emotional states.

By tracking the activity of brain systems involved in the expression of emotions, Gur and her colleagues believe they may be on the trail of the origins of some psychiatric illnesses and their symptoms.

**—Judy Folkenberg**

## Dr. Carol Kellogg: How Tranquilizers May Alter Fetal Nervous System

When an adult takes a minor tranquilizer, the drug binds to its particular receptor site in the brain, and the individual experiences temporary feelings of calm or sleepiness. In a rat fetus, according to Dr. Carol Kellogg, the same drug can permanently alter the structures and chemistry of the developing nervous system.

Kellogg, an NIMH grantee, is one of a growing number of scientists who spend years focusing on the biological mechanism through which a drug achieves its effect. What is the precise biological route the drug takes? What specific systems are affected by the drug? What role does dosage play?

A neuropsychopharmacologist at the University of Rochester, Kellogg has spent more than a dozen years studying the prenatal effects of drugs on neurotransmitters and the central nervous system of rats. Specifically, much of her research has focused on the effects of benzodiazepines (minor tranquilizers such as diazepam, popularly known as "Valium").

"We want to know what role the benzodiazepine receptors or binding sites play in the development of the fetus," says Kellogg.

She and her colleagues have found that diazepam has a profound effect on one part of the fetal brain—the hypothalamus. Among its functions, the hypothalamus is responsible for the regulation of neuroendocrine activity.

In one experiment, a group of rat offspring that had been exposed to diazepam *in utero* was placed in a stressful situation along with a group of control (non-exposed) rats. The control rats reacted to stress with normal neural responses; the exposed rats did not react at all.

The scientists then measured levels of the stress hormone plasma corticosterone (known as cortisol in humans) in the two rat groups. While the control rats had increased levels characteristic of a stress response, the drug-exposed rats showed no increase in the hormone.

However, if the pregnant animals were concurrently administered a drug which prevents diazepam from binding to the benzodiazepine receptors, their offspring behaved as the control group in responding to stress, and their levels of plasma corticosterone rose.

"The drug-exposed rats are processing information differently than the control group," says Kellogg. "We are certain that this difference is due to the prenatal exposure to diazepam.

"These particular findings do not bode well for the use of diazepam by a pregnant rat. Animals who do not perceive stress as such are in danger," she comments. Whether these findings are equally valid for humans is not yet known.

On the other hand, says Kellogg, this knowledge lends itself to the possibility that doctors might someday be able to intervene prenatally to prevent certain pathologies of the central nervous system in humans.

"If we can understand the precise neuromechanism, if we can pinpoint the neurons responsible for specific diseases of the central nervous system, then fetuses at risk might be treated with various drugs which could alter the abnormality."

**—Judy Folkenberg**

## Dr. Marian Fischman: Dangers of Cocaine To Brain and Cardiovascular Activity

Despite mounting evidence of cocaine's dangers, a dearth of reliable scientific information has existed on the drug's effects in humans. Dr. Marian Fischman, University of Chicago, is one of only a few researchers seeking to fill the gap. Having demonstrated in earlier animal research that cocaine's effects are dose-related and consistent, she is now studying the impact of prolonged cocaine use on humans in a controlled laboratory setting.

In her research, Fischman administers limited "street" doses of cocaine to experienced users under clinical conditions for 2-week periods. She has shown that cocaine's effects are almost identical to those of amphetamines, but that a cocaine "high" is shorter in duration. In fact, most users were unable to distinguish whether the drug given to them was cocaine or amphetamines.

Her research further suggests that cocaine has long-term effects similar to those of amphetamines, with predictable, damaging outcomes that occur after a common "binge and crash" pattern of use. Psychological effects include depression, paranoia, and an inability to concentrate. Fischman believes that long-term cocaine use, as with amphetamines, can lead to compulsive drug-taking and drug-induced psychosis.

Fischman's studies also have shown that cocaine, whether used intravenously or inhaled as a powder, causes physiological changes such as increases in heart rate and blood pressure. With intravenous use, subjects experienced the drug effects 2-5 minutes after injection, with peak effects at 8-10 minutes. When cocaine is inhaled, onset is slower, with peak effects 20 minutes later. Cocaine's cardiovascular effects are similar to those seen after use of amphetamines, although they last only about 40 minutes.

Fischman has also investigated the myth that cocaine improves performance, as some users have claimed. She found that under usual conditions, cocaine does not aid performance and in fact can impair certain capabilities, e.g., performance of learning tasks.

Although cocaine sometimes reversed the effects of sleep deprivation and returned subjects to their normal levels of performance, Fischman found no evidence that cocaine can maintain alertness over prolonged periods.

Fischman is currently trying to determine the specific properties of cocaine which make it rewarding for so many people. She also is looking at the effects of cocaine when used in conjunction with marijuana and/or alcohol. She believes such drug interaction studies are essential if research is to have any relevance to the real world where "most cocaine users are in reality polydrug users." She is also investigating the conditions which contribute to a cocaine "crash."

**—Lenore Gelb**

## Dr. Rachel Gittelman: Drugs for Children With Separation Anxiety Disorder

A 9-year-old boy worries constantly that he will be kidnapped, killed, or hurt in an accident. He refuses to go to school, follows his mother from room to room, and becomes unduly alarmed if she goes on a brief errand. He has trouble falling asleep unless his mother is in the same room, has repeated nightmares about being left alone, and complains of headaches and nausea on school days.

Known as separation anxiety disorder, this malady affects an unknown number of school age children. Not to be confused with the perfectly normal anxiety of young children who get "cold feet" during the first week of school, separation anxiety disorder interferes with the child's ability to live a normal life.

Dr. Rachel Gittelman, an NIMH grantee who is a noted expert on childhood disorders at the New York State Psychiatric Institute, has started one of the first studies to test the efficacy of drugs—using an antidepressant, a tranquilizer, and a placebo—in a group of 60 children age 5 to 17 diagnosed as suffering from separation anxiety disorder.

> *"Childhood anxiety disorders... may be more heterogeneous than previously thought."*

Although child psychiatrists have recognized school phobias and anxieties associated with separation from one's parents since the 1930s, separation anxiety disorder was not classified until recently as a discrete diagnosis. As a result, the disorder has received little publicity and minimal research. Part of the impetus for refining and delineating childhood anxiety disorders is the realization that they may be more heterogeneous than previously thought, since medication works on some but not all anxiety disorders.

Psychotherapy or behavior modification has been the usual treatment of choice for separation anxiety disorder in the past, even though some research data suggest that the antidepressant imipramine is effective in treating some children. A survey of the prescribing habits of physicians shows that minor tranquilizers are being given to pediatric patients with surprising regularity even though there have been no controlled studies of the drugs' effectiveness in treating childhood disorders.

The use of drugs to alleviate separation anxiety disorder raises the question of whether its etiology is biological. While the answer to that question is not known, research on adult anxieties has shown that certain phobias can be effectively treated with drugs. For instance, persons with agoraphobia (fear of public places) have benefited from antidepressants.

Gittelman, who has spent nearly two decades studying such childhood disorders as hyperactivity and conduct disorders, hopes that her research will provide important information on the treatment of separation anxiety disorder.

**—Judy Folkenberg**

## Dr. Bernice Porjesz: Impact of Chronic Drinking on the Brain

The more Dr. Bernice Porjesz delves into alcohol's effects on the human brain, the more she discovers extensive neurological damage caused by chronic drinking.

In over a decade of research collaboration with Dr. Henri Begleiter at the Downstate Medical Center, State University of New York, Porjesz has reported, among other findings, that

- alcohol abuse and aging may produce similar lapses in cognition, but they have demonstrably different impacts on brain activity; alcoholics are deficient in responding to stimuli, while elderly people are merely slow to respond.
- two brain structures which may be most susceptible to alcoholic dysfunction are the hippocampus and amygdala of the limbic system, which governs memory and emotion.
- while alcohol-inflicted brain damage tends to be reversible once chronic drinking stops, certain aberrations in the central nervous system seem to persist even after long periods of abstinence.
- young sons of alcoholic fathers show altered brain wave patterns *before* any exposure to alcohol.

Porjesz's results are chiefly based on sophisticated assessments of the brain's electrophysiologic activity, particularly evoked potentials (EPs), which she describes as "unique and sensitive indices of brain function, yielding data on the level of sensory, perceptual, and cognitive processing."

> *"Young sons of alcoholic fathers show altered brain wave patterns..."*

She and Begleiter are currently looking for a biological marker for alcoholism by comparing the EPs of children predisposed to the disorder with those of normal children.

According to Porjesz, sons of alcoholics and hyperactive boys are known to be at risk of becoming alcoholics, and the incidence of hyperactivity is reported to be quite high in alcoholics. Further, she notes, some sons of alcoholics and alcoholics share an electrophysiologic quirk: their EPs' P300 components—brain waves that are typically recorded after novel or significant events—are greatly reduced when they are asked to respond to specific "target" stimuli.

"At present, it is not possible to determine whether [alcoholic] brain dysfunctions antedate or are a consequence of chronic excessive consumption of alcohol," says Porjesz. By conducting longitudinal research on vulnerable children (sons of alcoholics, hyperactive boys, and hyperactive sons of alcoholics) before they have started drinking, she hopes to "provide a scientific basis for...a rationally based program of intervention to deter [through] primary prevention the occurrence of this disease."

**—Kate Callen**

# Dr. Katherine Halmi: Clues to Anorexia Nervosa Found in Hypothalamus

After studying anorexia nervosa for 15 years, Dr. Katherine Halmi of Cornell University Medical College believes that this eating disorder may be caused by subtle biological malfunctions rooted in the hypothalamus.

In her continuing search to solve the disease's puzzle, Halmi and her collaborator, Dr. Elke Eckert of the University of Minnesota Medical College, have launched one of the most comprehensive long-term followup studies of anorexia by focusing on 76 patients 10 years after treatment.

The assessment of former anorectics in Halmi and Eckert's NIMH-funded study will be extensive. Not only will they investigate current medical conditions, but the neuroscientists will also assess eating behavior patterns and attitudes, and psychological, social, and vocational functioning. First-degree relatives of the former patients will also be interviewed to determine the prevalence of psychiatric disorders in the family.

While previous studies (which typically used small patient samples) have for the most part concentrated on the incidence of depressive disorders among relatives, Halmi and Eckert will be looking at a wide range of psychiatric disorders. They feel that a narrow focus has prevented past investigators from seeing other psychiatric problems in relatives.

"For instance, one finding that has not been widely reported is the high incidence of alcoholism in both the mothers and the fathers of anorectic patients," says Halmi.

She and Eckert also will evaluate the patients' endocrine and physiological functions. Although the endocrine system is known to malfunction during the course of the disease, researchers debate whether these hormonal disturbances are due to the severe weight loss or if endocrine abnormalities existed prior to the weight loss.

"There may already be a subtle hypothalamic impairment, and when the stress of dieting is superimposed on this impairment, anorexia nervosa develops," Halmi comments.

These theories have been prompted by a preliminary endocrine study Halmi conducted of 40 former anorectics. She discovered that while patients had returned to their normal weight, their levels of growth hormone did not increase as expected when given the drug L-dopa, which is commonly used to test growth hormone secretion.

In addition, serum estradiol levels had not returned to normal. Adequate amounts of serum estradiol are needed for menstruation, and one of the trademarks of anorexia is absence of menses.

"Of course, menstruation is also dependent on body weight," says Halmi, "but there are factors independent of body weight which influence menstruation. We are particularly eager to study menstruation in the 10-year followup group."

An ideal study of endocrine factors in anorexia nervosa, says Halmi, would be a prospective study which keeps track of endocrine functions in a group of young women starting at age 10 and continuing until they reached age 25 or 30. Since such a study would be prohibitively expensive, "we're approaching this through the back door by looking at patients 10 years after they've been treated. I anticipate we'll find about one-third of the former anorectics are normal weight and doing well, one-third have remained ill, and one-third have weight fluctuations."

Her long experience in studying anorexia nervosa has given Halmi some definite ideas about the disorder. Certain behavioral characteristics traditionally associated with anorectics—such as the need to control others, a high degree of perfectionism, and self-deprecating thoughts, particularly about body image—have been blamed as the causes of anorexia. Western culture's singular insistence on equating thinness with beauty has also been implicated.

However, the scientist emphasizes, a person who diets out of a strong sense of perfectionism or because of a distorted body image does not necessarily succumb to anorexia nervosa. In one study Halmi conducted, a control group who distorted their body image as much as an anorectic group maintained their normal body weight.

But concentrating on personality features or cultural factors focuses attention on peripheral factors and clouds the real issue, contends Halmi.

"You can't get anorexia nervosa without a severe period of dieting," she points out. "Dieting always comes first."

Obviously, there is tremendous pressure to diet in today's society—far more, than say, the 18th century, Halmi notes. The motivation can be among a wide variety of right and wrong reasons. People diet to meet professional demands (jockeys, wrestlers, models, gymnasts), to control people around them, or because of peer pressure or dissatisfaction with their body image. Many diet for health reasons.

But why, asks Halmi, do only a small percentage go on to develop anorexia nervosa?

"These people have what I call a 'biological vulnerability.' Dieting causes certain physiological changes in their brains as well as in other parts of their bodies. Subtle impairments may exist in the hypothalamus which affect serotonin, norepinephrine, and dopamine, neurotransmitters that regulate appetite, menstrual cycle, moods, and thoughts. Somehow, the stress of dieting may exacerbate the pre-existing problems and cause further deterioration.

"As we continue to look for the origins of anorexia nervosa, I think we will find most of the answers in the biological arena," Halmi concludes.

**—Judy Folkenberg**

## PHOTO CREDITS

*Goldstein*—Stanford Univ. School of Medicine; *Szeto*—Cornell Univ. Medical College; *Ehlers*—Scripps Clinic and Research Foundation; *Kellogg*—Univ. of Rochester; *Fischman*—Univ. of Chicago Medical Ctr.; *Gittelman*—N.Y. State Psychiatric Inst.; *Porjesz*—Downstate Medical Ctr, State Univ. of N.Y.; *Halmi*—Cornell Univ. Medical College; *Lee*—Univ. of Calif. at San Fran.; *Eipper*—The Johns Hopkins Univ. Medical School

## Dr. Nancy Lee: Studying the Role of An Endogenous Opiate

Recent NIDA-funded studies have shown that an endogenous opiate peptide first discovered by an Institute grantee in 1978 may regulate the activity of other opiates and could prove useful in treating addicts and safeguarding patients who must use painkillers for long periods.

Dynorphin was originally isolated from the pituitary glands of animals by Dr. Avram Goldstein of the Addiction Research Center (Calif.), who identified it as the most potent of the brain's own opiates. Now, two NIDA-supported research teams have found evidence that the "dynamic endorphin" may govern both the painkilling effects of opiate drugs and the tolerance that follows extended opiate use. Their data further suggest that analgesia and tolerance occur not because a drug exerts its own cumulative action on the brain but because the drug disturbs the equilibrium of the brain's endogenous opiates—an equilibrium normally maintained by dynorphin and other regulatory peptides.

When Dr. Nancy Lee at Langley Porter Psychiatric Institute (University of California at San Francisco) began studying dynorphin, it had been classified as one of three known opiate peptide groups, each of which theoretically bound to a different receptor site in the brain. The scientist showed in mice that, while it produced no analgesia of its own, dynorphin exhibited pharmacologic effects when given with morphine, and these effects varied according to the animal's state.

In mice that had a tolerance for morphine—and typically would be almost immune to the drug's analgesic impact—dynorphin strengthened that impact. But in naive (nontolerant) mice, which should have been susceptible to the drug, dynorphin blocked the opiate analgesia. The peptide also altered certain of morphine's physiological side-effects. Morphine characteristically lowers body temperature and respiratory rate. In naive mice, dynorphin reduced these even further, but in tolerant mice, it reversed morphine's effects and restored these to normal levels. Perhaps most significant, the researchers found that dynorphin suppressed withdrawal signs in addicted mice which were taken off morphine.

As Lee explains in the March 1984 issue of *Trend In Pharmacological Sciences*, "the overall effect of dynorphin . . . is, in every respect, a stabilizing one. It prevents withdrawal signs, it potentiates the analgesic effect of morphine, and it reduces the side-effects . . ."

These findings were corroborated by Dr. Mario Aceto and William Dewey at the Medical College of Virginia. They found that dynorphin staved off withdrawal symptoms in addicted monkeys who had been taken morphine. But it did not mimic morphine's effects when given to nonaddicted monkeys, even at 24 times the dosage that performed like morphine in the addicted animals. The scientists concluded that "our results are consistent with the suggestion that dynorphin's function may be that of a modulatory peptide."

Lee speculates that under normal conditions, the endogenous opiates "exist in a state of dynamic balance; the effects of morphine . . . are then seen as resulting from an upset of this balance." The fact that dynorphin can block withdrawal but cannot produce analgesia on its own may indicate that the peptide works to restore the natural balance of the brain's opiates.

"Dynorphin clearly has tremendous potential in the clinical realm," she observes. Its ability to suppress withdrawal and strengthen analgesia in tolerant animals "suggests that it can substitute for morphine in addicted patients"—and this clinical value would be enhanced by its effectiveness in blocking morphine's physiological side-effects.

Lee feels that the results of the two NIDA-funded studies indicate "a new conceptual approach is necessary to drug therapy . . . . While the immediate future would suggest the use of dynorphin itself to help restore [endogenous opiate] balance, it is hoped that more sophisticated therapies will eventually allow stimulation of the brain's own natural processes for restoring this equilibrium."

**—Kate Callen**

## Dr. Paula Hoffman: Alcohol Interferes with Opiate Receptors

The discovery of the brain's own opiate substances may provide the missing link to a long-held theory that alcohol and certain other drugs produce similar behavioral effects because they share common biological mechanisms of action. At the University of Illinois in Chicago, an NIAAA grantee is pursuing this idea by exploring alcohol's interaction with the brain's opiate receptors.

To date, Dr. Paula Hoffman has found that ethanol interferes with the binding of various opiates to their receptors. She has specifically determined that chronic ethanol exposure can impede morphine's ability to stimulate dopamine synthesis. This means that the tolerance associated with prolonged alcohol use "may involve changes in the regulation of neurons that use dopamine to transmit information."

Dopamine is a neurotransmitter that at least partly controls the central nervous system's reward or "reinforcement" activities, neuroendocrine responses, and regulation of body temperature. In acute doses, ethanol (like opiate drugs) alters these three processes—it produces pleasurable feelings, it lowers body temperature, and it alters hormone secretion—and likely acts upon the dopamine systems that govern these processes.

After chronic doses, however, the body develops tolerance (i.e., becomes resistant) to these effects of ethanol. In part, the decreased effect of ethanol on dopamine-containing neurons may result, Hoffman suggests, from a loss of these neurons' ability to respond to routine modulation by endogenous opiate peptides. Hence, the dopamine stimulation that would normally be triggered by opiates is less likely to occur in the midst of ethanol tolerance.

The apparent interference with opiate receptors probably stems, in Hoffman's view, from ethanol's disruption of cell membranes and the membranes' adaptation to chronic ethanol exposure. Opiate receptors are membrane-bound proteins, as are certain endogenous factors that govern the responses to opiate binding. By disordering the membrane's lipid components, ethanol may interrupt protein function.

In fact, Hoffman notes, the variety of ethanol's central nervous system effects "may reside in the nature of each receptor-effector unit."

**—Kate Callen**

## Dr. Elizabeth Eipper: Understanding Processes that Produce Brain Peptides

Scientists over the past several years have discovered a large number of bioactive peptides within the brain which play important roles in its functioning.

Such peptides are known to be involved in producing natural analgesia, for instance, and in adrenal function and a variety of behavioral phenomena. But a clear explanation of how the various peptides are produced and act is not yet available.

"In no case do we yet have a good understanding of the biosynthetic processing in the neurons that produces these bioactive peptides, or of what mechanisms are involved in their regulation," says Dr. Elizabeth Eipper, a NIDA-supported scientist conducting research at The Johns Hopkins University School of Medicine.

Undaunted by the scope and complexity of the scientific task before her, Eipper has joined the cadre of neuroscientists in various parts of the country who are attempting to identify and characterize precisely the many peptides scattered in different regions of the brain. In her work, she is focusing on peptides that are derived from just one precursor molecule. She calls the molecule "pro-ACTH/endorphin," since she and a co-investigator demonstrated in earlier studies at the University of Colorado that it is a forerunner of both adrenocorticotropic hormone (ACTH) and beta-endorphin in the pituitary gland of mice.

In preliminary studies for her current work at the Hopkins Drug Abuse Research Center, Eipper has further explained the peptide production process in the anterior and intermediate pituitary. But the foremost aim of her investigations is to unravel the comparable process in the central nervous system, specifically in the hypothalamus.

According to research reports from a number of laboratories, many modifications can occur during biosynthesis of peptides which will profoundly affect their bioactivity in the brain. The reports on these processes, however, contains a number of discrepancies, according to Eipper. One goal of her investigations is to clarify the issues through highly exacting research.

For example, she is attempting to describe with utmost precision the structure and relative amounts of each active and inactive form of endorphin in the rat hypothalamus. She also is devoting much of her time to purifying and characterizing the enzymes responsible for the "tissue-specific" differences in peptide processing in the central nervous system.

"Various peptides can exert similar or antagonistic effects depending on their precise structure," Eipper says. "Understanding what accounts for these differences, and how the peptidergic system works in general, will help shed light on the neuroendocrine mechanisms of the brain, and on how such mechanisms may be involved in drug abuse behaviors."

Studying the peptide production process in the brain is much more difficult than in the pituitary, Eipper points out, because the amount of beta-endorphin in the hypothalamus is only 1/100th to 1/1,000th that in the pituitary. She is using methods she developed herself for isolating and extracting these minute amounts of peptide from brain tissue, as well as a variety of state-of-the-art techniques for studying peptides.

Another difficult and unique challenge Eipper has set for herself is to study the ACTH and endorphin-producing systems simultaneously. While other investigators have examined these processes separately, Eipper approaches them concurrently.

Her rationale for pursuing this more complicated research strategy is that the two processes may be interrelated in such a way that release of one peptide may in some manner regulate the function of the other. This kind of "peptidergic modulation" could prove to be an important physiological role of ACTH and endorphin in the brain and pituitary tissue, she believes.

Another goal of Eipper's research is to develop methods and establish conditions for maintaining pure cultures of ACTH/endorphin cells both for her own future work and that of other investigators working to map the many subtle steps which occur as peptides are processed within the brain.

**—James Helsing**

## Dr. Adele Kostellow: How Marijuana Affects the Reproductive System

A NIDA grantee has turned up new evidence that females who use marijuana may jeopardize their reproductive abilities and that those who use it during pregnancy may bear male offspring who cannot develop normal masculine sexuality.

Based on early data from rat studies, Dr. Adele Kostellow at Albert Einstein School of Medicine in New York has shown that tetrahydrocannabinol (THC), marijuana's psychoactive ingredient, exerts these specific effects on female physiology over time:

- the diestrus, a normally short period of sexual inactivity in the female reproductive cycle, at first becomes prolonged, which initially reduces fertility.
- even when the endocrine system adapts to chronic THC use and the diestrus returns to normal, litter size is reduced, and the birth weight of individual offspring is roughly 20 percent below normal.
- the liver's ability to metabolize other drugs and environmental chemicals which can also affect reproduction is impaired.

THC also is known to interfere with the release of androgens, or male sex hormones. Fetal androgens are necessary for the completion of male sexual development and for the masculinization of brain areas which determine sexual behavior in the adult.

In rats (which have a normal pregnancy of 21 days), the critical period for androgen secretion is apparently from day 17 of gestation to day 5 after birth. "During this time," Kostellow notes, "male plasma testosterone [an androgen] levels are not only higher than in the female but are higher than any subsequent levels until the development of sexual maturity." Examining male rats whose mothers ingested THC while pregnant or nursing, the investigator is measuring such masculine variables as genitalia at birth and at maturity, androgen levels during adulthood, sexual behavior, and ability to impregnate females.

Male offspring of THC-treated females appear to have normal genitalia, and their weight gain indicates a normal course of testosterone production during growth. However, in many individuals, the pattern of sexual behavior is significantly aberrant. Kostellow is documenting and evaluating these differences with the assistance of Dr. Eliot Gardner of Einstein's psychiatry department.

Since cannabinoids are known to greatly affect the release of gonadotropins (which figure in reproductive and pituitary functions), Kostellow is working on a special study of how long-term treatment with THC influences steroid concentration and nuclear binding in relevant brain areas. "Any alteration of these parameters in the experimental animals should be a valuable indication of the mechanism of hypothalamic response to long-term THC use," she observes.

The endocrinologist has designed her animal research to correspond as closely as possible with human marijuana use. She has been varying the THC doses to provide analogs for low, moderate, and heavy marijuana use, and most important, she has focused on how drugs impair function following a change in biochemistry.

"No animal experiments can exactly predict the consequences to a human population after some 10 or 20 years of exposure to such an agent," Kostellow emphasizes, "[but] they can provide some forecast as to which physiological functions are most likely to be affected."

**—Kate Callen**

# SYMPOSIUM: MENTAL HEALTH CARE OF DISASTER VICTIMS

by Wilbur Pinder

Innovations in the mental health care of disaster victims were discussed at an NIMH-sponsored symposium May 23 on the 10th anniversary of the Disaster Relief Act of 1974.

Dr. Raquel Cohen, a psychiatrist and nationally recognized authority on the mental health care of disaster victims, reported at the symposium that the psychological needs of victims are often overshadowed by the event.

Cohen, Professor, Department of Psychiatry, University of Miami School of Medicine, noted, as did several other experts, that the unseen wounds from disasters are the "mental lacerations and broken spirits" which often go untended in the urgency of the victims' more visible physical needs.

Dr. Larry Silver, Acting NIMH Director, told the symposium audience of emergency management officials and scientists that mental health research and clinical efforts focusing on the psychological facets of victimization began several decades ago.

"This research is not a new area of activity. But the introduction of large-scale, organized victim response programs is a relatively recent development," he noted.

Silver pointed out that the emergence of mental health programs designed specifically for disaster victims reflects a continuing refinement of the Nation's capacities to respond appropriately and effectively.

"In addition to knowing that mental health care is likely to be required by some victims of traumatic events," Silver said, "we are gaining a more precise understanding of when problems are likely to appear, what kinds of psychological difficulties individuals may experience, and what forms of clinical response may be differentially helpful to victims in given situations."

Dr. Bonnie Green, Assistant Professor, Department of Psychiatry, University of Cincinnati College of Medicine, and Co-Director of the College's Traumatic Stress Study Center, noted that disaster research actually began during World War II when scientists studied the effects of stress on U.S. servicemen. Other studies examined the nuclear bomb aftermath in Hiroshima and Nagasaki.

Green reported that the Cincinnati Traumatic Stress Study Center is currently following nearly 200 Vietnam veterans as part of a long-term research project designed to examine individual differences and outcomes under stress.

Jack Peuler, a California Health Department official, described how his Santa Cruz community responded to the 1982 heavy rains and mudslides along the coast of California that severely damaged 3,000 homes and left more than 100 families homeless.

"Within 2 days of the storm, the Santa Cruz Mental Health Center began to provide counseling services to disaster victims," said Peuler. "Soon we started getting calls from private health care providers and volunteers asking if they could help. This was the birth of Project COPE."

With funds provided under the Disaster Relief Act by the Federal Emergency Management Agency (FEMA) and administered through a grant by NIMH, more than 100 volunteers and professionals were given disaster counseling training.

The NIMH grant also supported group therapy sessions for the Santa Cruz disaster victims, and helped provide family counseling services for the community.

As a result of the 1982 disaster, Peuler said, the Santa Cruz community established an ongoing task group, composed of volunteer psychologists, psychiatrists, social workers, nurses, and pastoral counselors prepared to take immediate action in the event of another disaster.

Other speakers included David Eby, Assistant Director of Disaster Service, American Red Cross; Dennis Kwiatkowski, Chief, Individual Assistance Division, Disaster Assistance Programs, FEMA; and Dr. Juan Ramos, Director,. Division of Prevention and Special Mental Health Programs, NIMH.

In his opening remarks, Wilford Forbush, Deputy Assistant Secretary for Health Operations, said the Public Health Service has broad responsibilities for assisting State and local officials in responding to medical, public health, and mental health consequences of major disasters.

He noted that Dr. Edward Brandt, Assistant Secretary for Health, has chaired, since 1982, an interagency working group on health, established by President Reagan to develop policies and programs to improve national emergency medical response capabilities.

Dr. Mary Lystad, Chief, NIMH Center for Mental Health Studies of Emergencies, who chaired the meeting, pointed out that while knowledge concerning the psychological aspects of disasters has increased over the last decade, "there are still many unanswered questions."

The Center for Mental Health Studies of Emergencies, she said, funds research grants in five areas in collaboration with FEMA:

- Psychosocial response to acute life crises and emergencies.
- Mental health implications of acute life crises and emergencies for victims of all ages and their significant others,
- Design, implementation, and evaluation of mental health services and treatment,

*Cohen* *Silver* *Forbush*

- Prevention of victimization and evaluation of community intervention in mental health problems related to emergencies.
- Methodologies or techniques required to advance emergency mental health research.

## EARTHQUAKE RESPONSE

Coalinga, Calif., experienced an earthquake on May 2, 1983, measuring 6.5 on the Richter Scale. There have been more than 2,000 aftershocks, and damage estimates have exceeded $31 million.

Stress, fears, lethargy, irritability, sleep disorders, depression, and disorientation among both children and adults were reported immediately after the earthquake by area medical consultants and the Fresno County Health Department Mental Health Crisis Team.

Crisis counseling aid and a manual for residents were funded under a $180,000 grant to the State of California from the National Institute of Mental Health. The funds were made available to NIMH by the Federal Emergency Management Agency (FEMA), which responds to the needs of victims of Presidentially-declared local disasters.

NIMH awarded a supplement to the FEMA crisis counseling grant for research to assess the effects of relocation on development of symptoms of psychological disturbance.

The principal investigator is Michael Durkin, an architect. Working with him are Dr. Robert Sommer, University of California at Davis, an environmental psychologist, and Dr. Audrey Burnam, University of California at Los Angeles, a specialist on post-traumatic stress.

Other PHS agencies that help State and local governments respond to the medical and public health consequences of major disasters are the Centers for Disease Control, the Food and Drug Administration, the Health Services and Resources Administration, and the National Institutes of Health.

# AGENCY STAFF RECEIVE RECOGNITION

## DEPARTMENTAL AWARDS

**GIULIO L. CANTONI, M.D.**
Chief, Laboratory of General and Comparative Biochemistry, NIMH
*Distinguished Service Award, Scientific Category*
"In recognition of his discovery of S-adenosyl-L-methionine and of his fundamental contributions to our knowledge of the significance and scope of biological methylation reactions."

**JAMES D. LAWRENCE,**
Deputy Director, NIDA
*Executive Management Citation*
"In recognition of sustained accomplishments in planning, developing, and implementing programs of ADAMHA."

**ELAINE M. JOHNSON**
Director, Division of Prevention and Communications, NIDA
*Senior Management Citation*
"For outstanding leadership in planning and implementing a major program change under difficult circumstances, and superior accomplishments in establishing the Division of Prevention and Communications."

**GERALD M. HOLLAND**
Food Service Worker, Saint Elizabeths Hospital
*Distinguished Service Award, Heroic Act*
"On May 28, 1983, your display of courage and alertness prevented further assault to a female patient of Saint Elizabeths Hospital."

**JOSEPH YOUNG**
Food Service Worker, Saint Elizabeths Hospital
*Distinguished Service Award, Heroic Act*
"On May 28, 1983, your display of courage and alertness prevented further assault to a female patient of Saint Elizabeths Hospital."

*Cantoni*

*Lawrence*

*Johnson*

*Young*

*Holland*

## PUBLIC HEALTH SERVICE

**JOSEPH R. LEONE**
Associate Administrator for Management, ADAMHA
*Assistant Secretary for Health's Award for Exceptional Achievement*
"For exceptional leadership in the management initiative to protect the quality of patient care at Saint Elizabeths Hospital following significant staffing and budget reductions."

**LOUIS A. WIENCKOWSKI, Ph.D.,**
Division of Extramural Research Programs, NIMH
*Assistant Secretary for Health's Award for Exceptional Achievement*
"For exceptional dedication to the goals of the National Institute of Mental Health and superior administration of the Institute's extramural research programs."

**JAMES E. PITTMAN**
Executive Officer, NIMH
*Superior Service Award*
"For outstanding management leadership and administrative skills resulting in more effective and efficient operations in the National Institute of Mental Health."

**CARL A. TAUBE, Ph.D.**
Deputy Director, Division of Biometry and Epidemiology, NIMH
*Superior Service Award*
"For outstanding research, conceptual development, and leadership in mental health economics, services research, and statistics fields, including creative applications to a major DHHS prospective payment policy."

**THEODORE R. COLBURN, Ph.D.**
Chief, Research Services Branch, and Associate Director for Operations, Division of Intramural Research Programs, NIMH
*Superior Service Award*
"For ingenuity, dedication and resourcefulness in developing technologies and administrative innovations in the service of mental health research."

Senior Surgeon **THOMAS A. WEHR, M.D.**
Chief, Clinical Psychobiology Branch, NIMH
*Commissioned Corps Meritorious Service Medal*
"For ingenuity, dedication, and resourcefulness in ing and treatment of manic-depressive illnesses and their relationship to biological rhythms."

Medical Director **GENE D. COHEN, M.D.**
Director of Program on Aging
Division of Prevention and Special Mental Health Programs, NIMH
*Commissioned Corps Distinguished Service Medal*
"For outstanding leadership in the mental health program for the aging and for achievements as Executive Secretary to the Department's Task Force on Alzheimer's Disease."

**MARILYN J. VRANAS, R.N., M.S., M.A.**
Chief Nurse, Mental Health Program for the Deaf, Saint Elizabeths Hospital
*PHS Nurse of the Year Award*
"For being an outstanding clinician, an astute administrator, but above all, a humanitarian."

**AIDS HOTLINE**
Clifford Culp, M.D., Avraham Forman, Jacquelyn Hall, Ph.D., J. Ruth Kay, Dorothy A. Kinsey, Mary Ellen Quick, William Somers, ADAMHA

## AWARDS


Leone


Wienckowski


Pittman


Taube


Colburn


Wehr


Cohen


Vranas

# YOUTH AND DRUGS: DIFFERENT REASONS

A recent study conducted by David Murray and Cheryl Perry of the University of Minnesota found that the three major drugs used by youth—tobacco, alcohol, and marijuana—are viewed by adolescents as fulfilling very different functions in their lives.

The six functions selected for study were: (1) relief from boredom; (2) evidencing adulthood; (3) having fun; (4) making friends; (5) maintaining personal energy; and (6) reducing stress.

Surveys were conducted in 1983 with approximately 5,000 7th graders and 8,000 9th and 10th graders. Cigarette, alcohol, and marijuana use were measured in addition to psychosocial and demographic variables. The study also included expired-air carbon monoxide testing both to provide an objective measure of tobacco and marijuana use and to increase the validity of the self-report measures. The data reported here are for the 9th and 10th grade students only.

Tobacco use appeared most closely related to relief from boredom and stress reduction, and slightly less closely related to maintenance of personal energy. Alcohol use appeared most closely associated with making friends, reducing stress, and having fun. Marijuana use appeared most closely related to maintaining personal energy, reducing stress, and relieving boredom.

The researchers theorize that a particular drug also may serve different functions at different ages. Thus, a somewhat different pattern may emerge with 7th graders.

The results suggest that intervention strategies may be made more effective from the perspective of understanding the functions each drug serves for adolescents, rather than approaching all drug use as a more general issue.

—From *NIDA Clinical Research Notes*

# ALCOHOL *from p. 1*

on separate areas of expertise, are steps toward the goal of reducing the many kinds of alcohol- and drug-related accidents."

Trumble, who played a key role in implementing the Secretarial Initiative on Teenage Alcohol Abuse, said that in her new post as director of alcohol and safety projects, she will first explore accident and injury control efforts already in place in HHS.

"These include the Office of Disease Prevention and Health Promotion, Office of the Assistant Secretary for Health, and the Centers for Disease Control, which is the lead agency in the Department for accident prevention and injury control activities," Trumble said.

A key element of NIAAA's new alcohol and safety program will be developing collaborative relationships with Federal and State agencies, private organizations, research and technology institutions, community action groups, and the media.

The NIAAA program will include:

- *Research* - to assess the extent of alcohol involvement in a variety of accidents, advance the state of knowledge regarding alcohol and safety, and develop techniques to prevent and reduce alcohol-related accidents more effectively. Data collection to identify the role of alcohol and other drugs in trauma will be a primary concern. Collaboration with NIDA on a variety of performance impairment studies also is anticipated.
- *Conferences and Workshops* - to assure that research and technology findings form the underpinnings for the development of sound programs designed to prevent alcohol-related accidents by conducting a series of two-way technology transfer conferences and workshops.
- *Intervention Strategy Development* - to encourage the development and administration of alcohol safety programs by multiple public and private sector organizations and to initiate activities within NIAAA's own legislative authorities.

***Between one-third and one-half of all adult Americans involved in accidents, crime, and suicide had been drinking alcohol.***

Trumble said expert consultants will be identified to help NIAAA identify gaps in studies, technology, and related activities, and to assist the development of promising strategies to address alcohol-involved accidents.

"Experts in alcohol abuse, transportation, safety, law enforcement, health, business and industry, insurance, education, science, and communications will be involved," she said.

## DELINQUENCY *from p. 4*

level Coordinating Council for the Office of Juvenile Justice and Delinquency Prevention.

"Most worrisome is the fact that the very youngsters who need help most may be getting it least. These youngsters need our best efforts to help them regain their foothold toward positive, productive lives."

Although researchers attending the conference agreed that many important questions remain for further investigation, most concurred that enough is known already to provide a basis for beginning to plan experimental projects on delivery of services to these young people. They agreed that:

- A small number of serious, habitual offenders, many of whom have ADM problems, account for an extraordinary amount of all juvenile crime.
- Antisocial/delinquent behavior and ADM problems among youth appear to be rooted in common etiological factors, such as heavy involvement with deviant peers and weak bonds with family and school.
- A cluster of family variables appears to have the potential to serve as early predictors of delinquency and substance abuse. The most important of these are family management styles and family communications.

Carl Hampton of the National Institute on Drug Abuse served as coordinator of the conference, assisted by a workgroup with representatives from all three ADAMHA Institutes, OA, and OJJDP.

A second joint conference on services research is tentatively scheduled for this Fall, with the lead planning role being taken by OJJDP.

"We look forward to this series of conferences providing assistance to practitioners in helping more youngsters reduce or solve their delinquency and ADM problems before these problems reach serious levels," said Alfred Regnery, OJJDP Administrator.

## HOMELESS WORKSHOP by Myrle Kahn

Homelessness is a universally recognized problem in the United States, even though estimates of the number of homeless Americans vary widely.

As little information as there is on the homeless as a whole, even less is known about the homeless mentally ill. To gather and to help augment reliable information on this population, the NIMH Office of State and Community Liaison (OSCL) recently brought together for a 2-day meeting nine researchers—HHS grantees—who are studying the demographics, characteristics, and service needs of the homeless mentally ill. Although none of the studies has been completed, and no findings yet can be reported, participants had the opportunity to discuss their various methodologies, study populations, and hypotheses.

While these vary greatly, Dr. Leona Bachrach, Maryland Psychiatric Research Center, University of Maryland School of Medicine, an eminent researcher on deinstitutionalization, pointed out, "Each project has the potential to add materially to our knowledge about the homeless mentally ill population. Each is, in effect, part of a jigsaw puzzle whose broad outlines must still be drawn."

The researchers asked, "What have we learned thus far about the homeless?" It is known that the numbers have been increasing, that the average age of the population is getting younger, that the proportion of women in the population is increasing, and that the ranks of the homeless are swelling with seriously mentally ill persons who have been discharged or diverted from State hospitals. It is known also that the homeless population is extremely heterogeneous, including men, women, families, the physically disabled, the chronically mentally ill, and drug and alcohol abusers.

Several studies regarding the mental status of persons living in shelters and on the streets indicate a broad range of diagnoses, including schizophrenia, affective disorders, and severe personality disorders. While drug and alcohol abuse may be primary problems, some homeless mentally ill "self-medicate" themselves with drugs and alcohol to better tolerate the inordinate stresses of street life.

Researchers attempting to develop systematic methodologies for studying the homeless recognize increasingly the need for a consensus as to the definition of "the homeless mentally ill," who are found in diverse settings.

*Model of homeless person exhibited at APA*

The researchers are studying the homeless mentally ill in various parts of the country—in California, Massachusetts, Michigan, Wisconsin, New York, and Ohio. A psychologist at Saint Elizabeths Hospital is conducting one study.

HHS Secretary Margaret Heckler is to submit a report to the President on the homeless in August. Dr. Irene Shifren Levine, NIMH coordinator to the Secretary's Task Force on the Homeless, is contributing to the report.

# STAFF NEWS

## CHANG WINS DEPARTMENTAL PHOTO AWARD

Dr. Norman Chang, a health scientist administrator in NIAAA's Division of Extramural Research, has received a new Departmental Photo Award established by the Secretary this year.

His winning entry, showing his grinning 3-year-old-son, Paul, in folk costume, was entered in the "Children and Youth" color category.

Photography entries were accepted of HHS clients or employees in programmatic settings in four specific categories: 1) children and youth; 2) elderly; 3) handicapped and disabled; and 4) science and medicine.

Chang's citation was for "Distinguished Achievement in Photography for capturing the faces of 'The People Department' by showing the triumphs of the human spirit of those in need and the dedication of those who serve."

"I really didn't do anything special to get this shot," Chang modestly recalled. "I just selected my settings, aimed the camera, and snapped the shutter."

He noted, however, that the model had a lot to do with the final outcome. "He just has a winning quality," Chang said with his own broad smile.

ALCOHOL, DRUG ABUSE, AND MENTAL HEALTH

# ADAMHA NEWS

## AIDS GRANTS

Three new studies of psychological factors associated with AIDS, Acquired Immune Deficiency Syndrome, have been launched with more than $200,000 in research grants from the National Institute of Mental Health.

In announcing the grants as part of HHS's systematic war on AIDS, Secretary Margaret Heckler said, "The psychological impact of this disorder has been profound. We must understand the role of emotions, personality, and coping strengths in those who have the disorder or who may be vulnerable to it. We also must learn more about how stress and coping influence the body's immune system."

AIDS is a recently recognized and often fatal condition. Characterized by a breakdown of the body's immune system, it leads to invasion of opportunistic infections, the most lethal of which are a rare form of pneumonia and Karposi's sarcoma. As of October 19, AIDS has been implicated in 2,513 cases and 1,048 deaths in this country.

The three studies will examine the psychological impact of AIDS on patients diagnosed with the disorder and the impact of the threat of AIDS on members of high-risk groups of homosexuals.

The grantees are:

- Dr. Jimmie Holland, a research psychiatrist at the Sloan-Kettering Memorial Hospital for Cancer and Allied Diseases, New York City.

Holland has received more than $18,000 for a 1-year pilot study of psychological adjustment in three groups of male homosexuals: those diagnosed with AIDS; patients at risk for AIDS, such as those with lymphadenopathy, a lymph node disease; and a control group of healthy subjects.

The three groups will be compared for prevalence and nature of psychological distress and cognitive dysfunction. Changes in distress associated with the course and treatment of AIDS will be monitored.

Holland also will identify the mental health service needs of all three groups for the development of therapeutic and prevention programs.

*see AIDS (P. 2)*

**Dr. Daniel Weinberger demonstrates, with help from research assistant Mary Iadorola, how gamma ray receptors are used to map blood flow in the brain.**

### MAYER LEAVES AGENCY

Dr. William E. Mayer was confirmed by the U.S. Senate last month to be Assistant Secretary of Defense for Health Affairs. Dr. Mayer had served as ADAMHA Administrator since October 1981. Deputy Administrator Robert Trachtenberg is serving as Acting Administrator of the agency.

## SCIENCE PRESS SEMINAR

Three top scientists in the ADM field recently sat down with a group of reporters and discussed findings from their current agency-funded research at the latest ADAMHA Science Press Seminar.

Preliminary studies which may link symptoms of schizophrenia to a dysfunction of the frontal brain lobes were explained by Dr. Daniel Weinberger of the NIMH Intramural Research Program.

Research data on the validity of three new immunoassay tests for detecting marijuana metabolites in urine were presented by Dr. Charles Gorodetzky of the NIDA Addiction Research Center.

A computer model that simulates how different approaches to prevention would affect alcohol abuse in a given community was described by Dr. Harold Holder, an NIAAA grantee from the Human Ecology Institute, Chapel Hill, N.C.

### "MAPPING" SCHIZOPHRENIA

Preliminary studies by NIMH intramural scientists may have uncovered a phenomenon in the brain of schizophrenics that could account for many symptoms of the illness.

Using a new brain imaging technique called "regional blood flow mapping," Dr. Daniel Weinberger and his colleagues in the Adult Psychiatry Branch (APB) have noted that the frontal brain lobes in eight schizophrenic patients respond metabolically in just the opposite way from a healthy person's frontal lobes when asked to perform a simple card-sorting task.

Instead of "turning on," the frontal lobes "shut down" completely, and even regress from where they had been before the command to perform.

Comparing the brain to a computer, Weinberger said these early findings suggest that when such patients try to bring their brains "on-line" to perform a task in the logical sequence, they experience instead a "computer crash. Their frontal lobes go 'off-line,' and they lose access to them."

*see SEMINAR (P. 8)*

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES Nov. 18, 1983 Volume IX Number 20

• National Institute on Alcohol Abuse and Alcoholism • National Institute on Drug Abuse • National Institute of Mental Health

# AIDS *from p. 1*

• Dr. Jill Joseph, an epidemiologist at the University of Michigan, Ann Arbor.

Joseph has received a 1-year grant of more than $87,000 to develop and test psychological and behavioral measures to be used for AIDS research. Of particular concern is the identification of characteristics and conditions that could reliably predict vulnerability to AIDS.

• Dr. Lydia Temoshok, a psychologist at the University of California, San Francisco.

A 2-year grant in the amount of $96,000 has been awarded to Temoshok to learn about the psychological and behavioral consequences of having suspected or diagnosed AIDS for the purpose of developing service and educational programs.

She will begin by documenting patients' psychosocial needs throughout the course of their illness and examining behaviors in vulnerable individuals that impede early detection and treatment. Periodically, she will correlate the immunological function of subjects with their clinical and psychological conditions to learn about the relationship between psychological factors, the immune system, and physical illness.

Findings from this study will be translated into guidelines for service programs for AIDS victims and for the education of health care providers and those vulnerable to the disorder.

ALCOHOL, DRUG ABUSE, AND MENTAL HEALTH
ADAMHA NEWS

ALCOHOL, DRUG ABUSE AND MENTAL HEALTH ADMINISTRATION

ACTING ADMINISTRATOR
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  Robert G. Niven, M.D., Director
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# MINORITIES by William Herndon

**Fleetwood Roberts and Dr. James Ralph**

A new $250,000 Alcoholism Minority Research Scholars Program was announced by Dr. Lois Chatham, Director, NIAAA Division of Extramural Research, at a recent meeting sponsored by the NIMH Center for Studies of Minority Group Mental Health.

The funds will be made available to five NIMH-supported Research and Development Centers to stimulate participation of minority scholars in alcoholism research. Each center may apply for up to $50,000 in direct costs per year.

Speaking to the Directors of the NIMH Minority Fellowships and Minority Research and Development Program, Dr. James Ralph, Chief of the NIMH Minority Center, noted, "The research literature and mass media reports are focusing attention on the increasing use and abuse of alcohol, not only among minority groups—who are more vulnerable to alcoholism and alcohol-related problems—but also among all other segments of our society."

Candidates for the program must hold Ph.D. or M.D. degrees and have documented experience in alcoholism research. They will be expected to review and analyze relevant data and literature, conduct research seminars, and explore additional avenues of support for conducting research.

According to Fleetwood Roberts, Chief of the NIAAA Technical Assistance Branch, the Institute proposed the unique collaborative funding effort to develop the capability within the five NIMH Centers for stimulating high-quality alcohol research targeted at minority communities.

The five Centers, each of which currently receives $250,000 from the NIMH Minority Center, were established between 1973-1977 to conduct research focused on the mental health of specific minority groups. The Centers are:

• Pacific/Asian-American Mental Health Research and Development Center, University of Illinois, Chicago

• Spanish-Speaking Mental Health Research Center, University of California, Los Angeles

• Hispanic Research and Development Center, Fordham University, Bronx, N.Y.

• National Center for American Indian Mental Health Research, University of South Dakota

• Fanon Research and Development Center for Black Studies, Charles R. Drew Postgraduate Medical School, Inglewood, Calif.

# NIDA MEDIA CAMPAIGN

by Lenore Gelb


"Just Say No" and "Get Involved With Drugs Before Your Children Do" are the messages of a new multimedia advertising campaign launched by the National Institute on Drug Abuse and announced October 11 by First Lady Nancy Reagan.

The campaign will seek to mobilize young teenagers, teenagers, and parents "to take control over the drug abuse problem and resist peer pressure to use drugs," said NIDA Director William Pollin.

The campaign was designed in cooperation with the Advertising Council, a nonprofit organization which engaged the volunteer services of the Needham, Harper, and Steers advertising agency to plan and execute the media project.

Campaign materials include print ads for magazines and newspapers, public service announcements for television and radio, and transit ads, as well as posters and brochures.

In telling teenagers to "Just say no," the campaign assures them that they don't have to use drugs to be "cool" and that not everyone uses drugs.

The campaign also urges parents to assume responsibility and take action to prevent initial drug use. The media ads show how parents can educate their children about drugs and create a feeling of openness in discussing drugs.

According to Pollin, NIDA has undertaken this venture because "we know that 2.4 million young people age 12-15 have used illicit drugs, and nearly three-quarters of a million children use marijuana on a regular basis.

"The campaign will address this widespread use of drugs. Its primary goals are: to keep the public's attention on the health consequences of drug abuse; to increase awareness of the social and psychological effects of drug-taking; and to promote change in society's attitudes toward the problem."

The Institute is encouraged by signs that drug abuse prevention efforts similar to the new campaign are working, Pollin added. Citing NIDA's annual survey of more than 17,000 U.S. high school seniors, he noted that in 1982, almost all categories of drug use patterns had fallen to their lowest levels since 1976.

"Our efforts to inform the public of the consequences of drug abuse, combined with the actions of parents' groups, State and local governments, and other public and private organizations, are beginning to show results," he said.

# Get involved with drugs before your children do.

Sooner or later, someone's going to offer to turn your children on.

It could be their best friends.

And chances are, you won't be anywhere in sight.

So what can you do?

Obviously, the time to talk to your children about drugs is before they have to make a decision on their own.

Which means you have to learn something about drugs.

Learn the dangers.

And learn to recognize the signs of drug use. Listlessness in your child. Sudden drop in school grades. Temper flare-ups and staying out late a lot.

Learn about peer pressure on a twelve-year-old. Then show them you understand how important their friends are to them. But also tell them that real friends won't insist they do drugs.

Check your own personal habits. You can't tell a child about the dangers of drugs with booze on your breath.

But it's through love and understanding that you can be the most effective.

Threatening to tear their arms off just won't work.

You can get a lot more ideas from the booklet, "Parents: What You Can Do About Drug Abuse." Write: Get Involved, P.O. Box 1706, Rockville, Maryland 20850.

Remember, it doesn't always happen to someone else's kids.

After all, there are over 35 million drug users in America.

And they're all someone's children.

Ad Council — A public service of this publication and the National Institute on Drug Abuse

CM-SPEC 9-83

NATIONAL INSTITUTE ON DRUG ABUSE CAMPAIGN
MAGAZINE AD NO. NIDA-1591-83–7" x 10" [110 Screen]
Volunteer Agency: Needham, Harper & Steers Adv., Inc., Volunteer Coordinator: Nathan Kelne, New York Life Insurance Co.

# WOMEN SCIENTISTS AT ADAMHA

*Long Neglected*
*Woman Scientist*
*Awarded Nobel*
***—Washington Post***
October 11, 1983

When Dr. Barbara McClintock won the 1983 Nobel Prize in Medicine, news accounts of her 60-year research career pointed up the isolation and disregard she had to overcome as a female in a traditionally-male domain.

McClintock's Nobel may be a sign that women now receive the same credit for research breakthroughs as men. But do women also have the same opportunities to achieve such breakthroughs?

In ADAMHA's three intramural research programs, 75 women scientists hold roughly 25 percent of the research staff positions. Most have been with the agency less that 1 year as visiting or staff fellows. At both NIDA and NIAAA, the women are working with their colleagues to set up new research units within their programs.

Like their male colleagues, the female scientists applied for research positions, often at the invitation of program directors who recognized their talent. The women, like the men, spend long hours in the laboratories and clinical wards, and they take a lot of work home. Even the newest researchers experience pressure to publish noteworthy findings. At the end of their tour, they will have to compete with their colleagues for a small number of coveted tenured positions.

The demands of a research career are tough—but are they any tougher on women? In recent interviews with *ADAMHA News*, female scientists in all three Institutes speculated on whether their gender has any effect on their professional advancement.*

The women agreed that, in general, the research community does not countenance overt sexual discrimination. All scientists are judged on the basis of their productivity and the quality of their research, the women said. The greatest single influence on any developing scientist, they added, is the guidance of a mentor or research director. They reported that their mentors are highly supportive and have been instrumental in launching their careers.

The world of science seems to have changed a lot since the young McClintock was refused admission in the 1920s by a science department that would not accept women as majors in the subject. ADAMHA's female scientists evidently enjoy working as full members of their Institute research teams, and they expect to have the same access to future prizes and posts as their male counterparts.

However, the women reported that they still have not attained a proportionate number of high-ranking (GS-12 and above) and permanent (tenured) staff positions.

Further, many disclosed that they often encounter subtle forms of discrimination, not from their program directors, (who are almost all male), but from a few male peers and some support staff (who are almost all female). These coworkers tend to treat the women researchers with either less respect or more condescension than they show men.

The women emphasized that such behavior is not easily shrugged off: on a day-to-day basis over time, they said, seemingly-minor disparities can impinge upon their dignity—and ultimately, their effectiveness—as professionals.

For example, several women reported that a few secretaries in their programs address the male scientists with the formal title of "Dr." but call the women scientists by their first names. At the same time, they noted, support staff women tend to expect (and get) more leniency and consideration from women scientists when personal problems affect work performance.

Male colleagues—who eventually will be jockeying with the women for staff positions—sometimes adopt a superior or patronizing attitude. One scientist recalled that, in a casual conversation with a man in her unit, she once mentioned that she was experiencing routine difficulties with her 2-year-old child. For some time afterward, the man persistently referred to her "family problem" and treated her as a vulnerable person.

For the most part, the women scientists seem to understand that some people still have trouble accepting the idea of a woman in research. One woman observed that the secretaries in her program had always worked for male scientists and have come to perceive research as a male vocation. Another remarked that, while male colleagues may not treat women as fairly as the program directors do, they also do not feel as secure as the men at the top.

Because some women scientists still encounter prejudice, many feel that they must perform flawlessly to refute such bias. During her first fellowship, one researcher was showered with praise by her supervisor for being a competent woman scientist. The man previously had supervised the work of one or two "flaky" women; ergo, he had assumed that all women researchers are inept. Had he supervised one or two such men, the researcher wondered, would her supervisor likewise have expected all men to be inept?

Because they are prey to such generalizations, many women said they become very angry at the few female researchers who perform poorly, or worse, who behave according to feminine stereotypes (e.g., in a seductive or helpless manner). The women also feel they must be careful about their own comportment, because gestures of friendship that a scientist normally extends to colleagues can be misinterpreted when the scientist is female.

Consequently, some women researchers say, they miss out on the benefits that scientists derive from the company of other scientists. The loss of camaraderie is especially felt at professional gatherings, where researchers have unique opportunities to consult each other informally and establish valuable contacts. One woman reported that she usually eats alone at conferences to avoid feeling ostracized when, seated

*Above left: Dr. Karen Kumor serves as medical officer in NIDA's clinical research ward. Below left: Drs. Jeannette Johnson (center) and Elizabeth Lane (right) of NIAAA compare how drugs such as diazepam and antidepressants are metabolized in alcoholics with impaired livers, heavy drinkers, and healthy volunteers.*

* In a 1981 survey, 75 percent of NIMH women scientists queried said they were reluctant to be identified as complainers because they did not want to be set apart by their peers. The women interviewed by ADAMHA News expressed their views anonymously.

around a table in a restaurant, male colleagues discuss each other's research at length—and leave her and her work out of the conversation.

Loneliness is one of the biggest hurdles for a woman who embarks on a career in research, some have found. With few female counterparts and almost no female role models on faculties or in research administration, woman scientists must be intensely self-motivated. One researcher commented that she wasn't sure whether she is under greater pressure because she's a woman, or whether she has to put greater pressure on herself because she's a woman.

If the women in ADAMHA's research units are any indication, female scientists seem ready and eager to meet demands from any quarter. All the scientists interviewed enjoy working in a creative environment without the distractions of teaching and writing grant proposals which are *de rigeur* in university settings. They especially appreciate having the opportunity to collaborate with the Nation's leading ADM experts and to draw on the vast resources of a Federal research establishment.

•••

*Above right: Dr. Connie Duncan-Johnson of NIMH, who is studying attention disorders, uses this highly sophisticated equipment to measure performance deficits by recording electrophysical signals through each subject's scalp.*
*Below right: Dr. Edythe London of NIDA assesses the effects of drug abuse on regional brain function.*

In the early years of the NIMH Intramural Research Program, it was no coincidence that almost all of the applicants for staff fellowships were men: male clinicians who entered the IRP automatically were exempt from the military drafts of the 1950s and 1960s.

Dr. Judith Rapoport remembers that the sensitive issue of keeping male scientists out of war zones was a factor that made it a hard decision to apply, but she did so and was accepted by IRP in 1960. At the time, Rapoport already was breaking new ground as a woman scientist: she was one of five women in her Harvard medical school class of 155 graduates, and the only female intern in a group of 42 new doctors.

Times are changing. As Chief of the Section on Child Psychiatry, Laboratory of Clinical Science, Rapoport is one of three women who are directing IRP units. Hazel Rea, an IRP staff member since it opened in 1948, recently was named Deputy Director of the entire program. In all, women scientists hold 14 of 80 tenured IRP positions. Forty percent of the professionals in staff associate positions are women, as are 20 percent of the current class of the Clinical Associate program, whose alumni include the majority of full-time psychiatric researchers at U.S. universities.

The roster of female NIMH scientists includes several recognized authorities in the mental health field, such as:

- Rapoport, winner of the 1983 Blanche F. Ittleson Award for Research in Child Psychiatry, who pioneered the study of amphetamines used to treat hyperactive children.
- Dr. Candace Pert, Chief of the Section on Brain Biochemistry, Clinical Neuroscience Branch, who received an Arthur S. Flemming Award in 1980 for her landmark research on opiate receptors in the nervous system and her discovery of the first opioid compound in human plasma.
- Dr. Marian Yarrow, Chief of the Laboratory of Developmental Psychology, where she and several of her colleagues recently shared in a 5-year research award from the MacArthur Foundation to study the transition period between infancy and early childhood.
- Dr. Carolyn Waxler, a colleague of Yarrow's, who recently won the ADAMHA Administrator's Award for Meritorious Achievement for her research on children of depressed parents.
- Dr. Connie Duncan-Johnson, Chief of the Unit on Psychophysiology, Laboratory of Psychology and Psychopathology, who in 1980 was the first recipient of the Distinguished Scientific Award for an Early Career Contribution to Psychophysiology (given by the Society of Psychophysiological Research).

The newer female scientists at NIMH show promise of expanding on this record of achievements. With the vantage of a range of disciplines—from biology and chemistry to botany and zoology—they are exploring the various aspects of brain function to determine which neurological processes are involved in the etiology and pathogenesis of mental disorders.

While NIAAA's research program dates back to the founding of the Institute in 1970, its current set-up is relatively new: two units—the Laboratory of Metabolism and the Laboratory of Preclinical Studies—were formally established in 1978 in Rockville, Md., and a third unit—the Laboratory of Clinical Studies—just opened this year on the NIH campus in Bethesda, Md.

Women play an integral role in NIAAA's growing scientific enterprise: they comprise 25 percent of the professional intramural staff and hold 2 of 10 tenured science posts. Laura Rosenthal is Deputy Director of the entire program. One of the five unit directors of the new Laboratory of Clinical Studies is Yolande Davenport, Chief of the Unit on Family Studies. At an ADAMHA Science Press Seminar early this year, NIAAA's Dr. Elizabeth Parker presented important findings that alcohol consumption, even at "social drinking" levels, can impair memory and other cognitive functioning.

The Institute's newer female scientists are teaming up with their colleagues to expand knowledge of alcohol and health. At the Metabolism and Preclinical Laboratories, women bench scientists are working with animals to determine how alcohol is ingested by the body and how it affects tissues, vital organs, and particularly, the central nervous system. Several women in the Preclinical Lab have come from Europe and Asia to learn how advanced techniques in electrophysiology and biochemistry can be used to measure alcohol's effects on the central nervous system.

Current studies by women at the Clinical Laboratory—which features one of the Nation's only alcohol clinical research wards—include a project that examines a range of dimensions (e.g., developmental, electrophysiological) of parent-child relationships in alcoholic families. Another project is using CAT scans, PET scans, and event-related electrical potentials to examine the brains of alcoholics with organic brain syndrome.

In a different research area, women are directing projects that investigate changes in

*See WOMEN (P. 6)*

## WOMEN SCIENTISTS AT ADAMHA *from page 5*

the metabolism of prescription and over-the-counter drugs that occur in the alcoholic patient at various steps of disease and recovery.

Because NIAAA's research program is relatively small, its women scientists are part of close-knit teams which engage in an unusual degree of collaboration.

The same holds true for the women at the NIDA Addiction Research Center (ARC). NIDA's research program predates the establishment of the National Institute of Mental Health, the original unit of ADAMHA. Federal drug abuse research goes back to 1929, when PHS established a Narcotics Division for research on drug addiction. When drug abuse was found to be a psychological and social problem as well as a physical one, the Division was renamed "Division of Mental Hygiene," which evolved into NIMH and eventually into three separate Institutes and an agency.

Today, the ARC is in a new stage of development: after a long history of scientific achievement at the original Lexington (Ky.) site, all staff are moving to a consolidated program at Baltimore City Hospital, Md., where the ARC eventually will occupy a building of its own on hospital grounds.

At present, two of the 21 ARC researchers are Dr. Edythe London, one of 16 tenured ARC scientists, and Dr. Karen Kumor, one of five fellows.

London is a neuropharmacologist who previously worked as a staff scientist at the National Institute on Aging. Trained in neurochemistry, she has been particularly fascinated by the work of Dr. Louis Sokoloff, NIMH, who developed the technique of mapping brain activity with the use of a radiolabeled glucose analogue. Using the Sokoloff 2-deoxyglucose technique, London is conducting animal research on how brain metabolism is influenced by various opiate compounds. These studies will help her assess how drug abuse affects the functioning of different regions in the brain.

Kumor, a clinical pharmacologist who previously was on the faculty of the University of Texas, is conducting controlled studies with human subjects to measure the subjective and physiologic effects of two drugs: ketocyclazocine, a kappa receptor agonist, and naloxone, an opiate antagonist. The data from these studies will help elucidate the function of different types of opiate receptors in humans.

Because she holds a medical degree, Kumor also serves as medical officer of the ARC clinical ward and is responsible for the care and safety of the people who have volunteered to be research subjects (all men). The first woman doctor most of the subjects have ever encountered, Kumor is accompanied on her rounds by a nurse practitioner who happens to be a hefty man.

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The world of the young working scientist in ADAMHA, male or female, is an intensely competitive one in which job security and other prerequisites are secondary to the values of science and the excitement of discovery. Recruitment and retention of doctoral-level researchers follows the academic rather than the civil service model: tenure is granted to only a select few after several years of proving themselves in the labs and clinical branches. Promotions also must pass muster with a multitiered peer review system.

In the NIMH Intramural Research Program, for instance, approximately one-half of those who are called "journeyman" scientists are in temporary, rotating positions, and fewer than 10 percent ultimately attain permanent civil service status.

Young doctoral graduates from all over the world compete for a limited number of entry-level, 2-year staff fellow positions. Last year, only about 17.4 percent of applicants to the NIMH Medical Staff Fellow program were ultimately accepted.

The fellows may compete for an even more select category of Associate positions which are renewable on a year-to-year basis up to 7 years at the discretion of the lab/branch chief. Most young researchers, particularly those pursuing clinical careers, leave the Institute after a 2-3 year training experience.

Only the best among the well-winnowed ranks of Associates are recommended for tenure by their lab/branch chiefs. This recommendation is reviewed and forwarded by the NIMH Scientific Director to a Scientific Promotion Review Committee which judges the quality and quantity of the investigator's publications and solicits independent evaluations of his/her achievements from peers in the field.

The IRP Laboratory Chiefs then vote on the approved cases by secret ballot. Those which pass are then referred to the NIH Scientific Directors, which solicit even more peer evaluation letters and deliberate each case over a 5-month period. Rejections are not uncommon at any level in this process, and promotions after tenure undergo similar scrutiny.

The same process also holds for scientists in the NIAAA intramural program, where approximately 75 percent of the scientific staff are in non-tenured positions.

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## HOMEOSTASIS

*"Some strictly pure reflex neurophysiologists are being dragged kicking and screaming into the necessity of studying behavior."*

In the late 1950s, when scientists were beginning to chart the common ground between mind and body, Dr. Neal Miller became intrigued by the process of *homeostasis* (the body's ability to regulate and stabilize its internal states). Since the brain is "the supreme coordinating organ of the body," and learning is "one of the highest functions of the brain," Miller reasoned, conscious learning processes might play a role in seemingly-unconscious homeostatic regulations.

Research over the ensuing 25 years has convinced Miller that, in fact, learning plays a variety of roles in homeostatic regulation of the body. In the latest "Frontiers of Mental Health Research" seminar sponsored by the NIMH Division of Extramural Research, the Rockefeller University psychologist described a range of learned responses that organic systems use to cope with illness or injury, environmental change, and other disruptions.

Miller began by discussing two of the best-known homeostatic responses: skeletal responses learned through instrumental or operant conditioning, and visceral responses learned through classical conditioning.

In operant conditioning, the animal repeatedly experiences a homeostatic disturbance (e.g., thirst) and learns over time to exert its skeletal/muscular system to correct the disturbance (in the wild, it searches for a water source; in the laboratory, it presses a "water" lever). This direct action achieves homeostasis by changing the external environment (increasing the availability of water to quench the thirst).

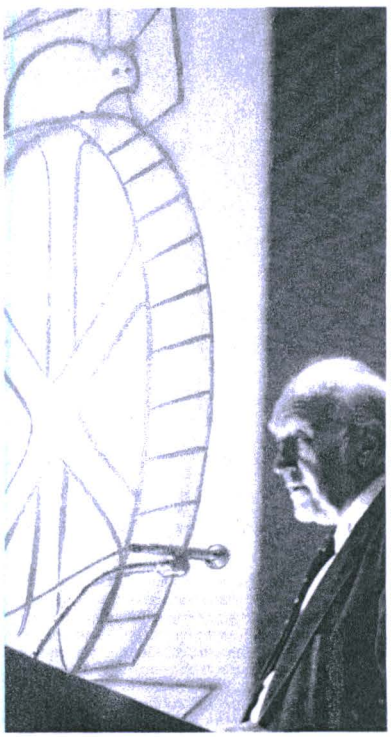
In classical conditioning, the animal repeatedly experiences a homeostatic disturbance (e.g., hunger) which is corrected each time when a neutral cue (the ringing of a bell in the laboratory) is followed by a homeostatic stimulus (food). The animal learns over time to associate the cue so strongly with the stimulus that its visceral system, which automatically

by Kate Callen

responds to the stimulus, will be activated by the cue alone (the animal will salivate at the sound of the bell.) This involuntary reflex action achieves homeostasis by changing internal physiological states (triggering the digestive system to prepare for the probable appearance of food).

Psychologists have long assumed that classical conditioning is just a matter of transferring a response from the unconditioned stimulus (food) to the conditioned stimulus (sound of the bell). However, Miller reported, "there are certain paradoxical cases in which the response to the conditioned stimulus is *opposite* to the one elicited by the unconditioned stimulus; this could not have been produced by mere transfer."

He gave several documented examples. Patients who take atropine (a drug used to treat spasms) first experience dry mouths,



but repeated doses cause them to salivate excessively, Mild doses of insulin, which initially lower blood sugar, will raise blood sugar over time.

These "appear to be...learned compensatory responses (not purely pharmacological effects) involved in the tolerance produced by repeated administration of the drug," Miller observed. "Such tolerance clearly reduces the homeostatic disturbance produced by the drug."

The *learned* nature of this compensatory response is demonstrated by two facts: a series of placebo injections can extinguish the tolerance, and a radical change in setting can affect the tolerance.

The second fact, Miller noted, is "an important component of withdrawal from alcohol or morphine." Addicts may go through complete withdrawal in such new settings as hospitals, only to experience a resurgence of withdrawal symptoms, and even relapse, when they return to their original drug-taking environment. On the other hand, soldiers who became addicted and eventually experienced withdrawal in Vietnam had a much lower relapse rate when their return to the States placed them in a "new" environment.

While researchers have not yet determined how or why paradoxical learned responses occur, Miller suggested one strong possibility: these visceral responses are *instrumentally* learned, and are reinforced when they reduce the homeostatic disturbance and restore stability.

This notion contradicts the traditional dichotomy of instrumental/skeletal vs. classical/visceral conditioning which Miller described at the beginning of the lecture. Yet, he reported, "there is convincing evidence to support such an assumption." Thirsty dogs will increase their salivation if such increases are rewarded by water, and humans can learn to change their heart rate, blood pressure, and other visceral responses.

But are these *direct* visceral responses, or are they the result of skeletal actions stimulating visceral reflexes? While many visceral responses actually are accomplished through skeletal exertions (e.g., patients can learn to arrest attacks of paroxysmal tachycardia by taking sudden deep breaths), Miller states that the therapeutic effects of learning on homeostasis "will be more extensive...if visceral responses can be directly instrumentally learned."

Such direct visceral responses have been achieved by people who are paralyzed by spinal cord injuries. These patients suffer the homeostatic disturbance of orthostatic hypotension that causes them to faint whenever they are helped into an upright position. In a study conducted by Miller and Dr. Bernard Brucker, a group of these patients learned to correct the disturbance by producing large increases in blood pressure *upon request.*

The learning process initially was triggered by a biofeedback apparatus. Every time blood pressure rose involuntarily, a mechanical tone would sound, and patients were instructed to try to make the sound as frequently as possible. As Miller explained it, the tone-signaling success was as much a reinforcement as "the sight of a basketball swishing through the hoop [for] a novice learning to shoot foul shots."

Over time, the patients were able to produce relatively large increases in blood pressure, which helped expand their range of activity. One patient whose spinal cord had been severed by a gunshot learned to walk with crutches and braces. He reported that keeping his blood pressure up eventually became "relatively automatic, like balancing when he used to ride a bicycle," Miller recalled.

The patients also learned to perceive the increases in blood pressure on their own without the aid of artificial feedback. In the early stages of learning, they concentrated on exciting thoughts (e.g., sexual fantasies) to raise their blood pressure; later, they discarded such stimulating imagery, because "all they had to do was *want* their blood pressure to go up."

Further, in the "feedback" learning stages, increased blood pressure was accompanied by increased heart rate--an indication that skeletal maneuvers are effecting the visceral response. But "after extensive use in daily life," Miller observed, increased blood pressure did not affect the heart rate. Such physiological evidence "makes it seem quite probable that these patients were exerting direct learned control over blood pressure."

He emphasized that these and other findings--including evidence that people who work in cold environments can learn to "warm" their fingers at will and thereby increase their manual dexterity--need to be replicated, and he exhorted his audience to "use your ingenuity and your special knowledge and skills to devise such tests."

Miller seemed especially encouraged by the fact that "some strictly pure reflex neurophysiologists are being dragged kicking and screaming into the necessity of studying behavior" as the scientific community begins to recognize that "we need to know behavioral states to understand functional pathways in the nervous system."

## 'SEMINAR' from P. 1

He cautioned that the findings, which are based on only eight patients, are "far from conclusive." Nevertheless, he believes the results suggest that schizophrenia is at least partially caused by a physical abnormality, and not by emotional factors alone.

According to Weinberger, the discovery is a "seedling" in efforts by the APB Clinical Neuropsychiatry/Neurobehavior Section "to link serious psychiatric illness with underlying brain aberrations." Such work is essential, he said, in fulfilling the Section's unique mission to "span the interdisciplinary gap between psychiatry and neurology."

Regional blood flow mapping, which Weinberger called a way to "open up the black box of the brain," measures the degree of activity in various parts of the brain by recording how fast a radioactively tagged gas "washes out" of that region during performance of an activity.

In the study, the patients inhale mildly radioactive zenon, an inert and harmless gas, which is carried through the bloodstream to the brain. The subjects then breathe room air as they perform an experimental task with their heads surrounded by 32 gamma ray detectors (see photo on page 1). The task used is the Wisconsin Card Sort test, a scientifically validated indicator of frontal lobe activity which involves the simple matching of symbols, colors, and numbers or patterns of objects.

As the subjects perform the task, a computerized imaging system determines the rate of blood flow to each brain region based on the washout of the radioactivity. The more the blood flows to a region (indicating that the region is involved in the task), the faster the radioactivity disappears from that region.

In the schizophrenics studied by Weinberger and his colleagues—Drs. Ronald Zec, Karen Berman, and Shaila Maddaiah, and Mary Iadarola—the regional blood maps indicated a sharp drop in blood flow to the frontal lobes of four of the patients attempting the card-sorting task. The other four patients showed diminished flow to the frontal lobes. By contrast, control subjects showed increased blood flow to the region.

"This confirms clinical observations that the cognitive capacity of schizophrenic patients typically deteriorates when they are expected to perform a task in a logical, sequentially-oriented manner," Weinberger said.

Many other characteristic symptoms of schizophrenia also can be attributed to dysfunction of the frontal lobes, he pointed out, such as socially inappropriate behavior, flat emotions, social withdrawal, poor insight, and lack of concern about personal hygiene.

"Our findings also are consistent with the hypothesis that schizophrenia involves hyperactivity of the brain's dopamine system," Weinberger said. "The biochemical pathways for this neurotransmitter enter the frontal lobes from the mid-brain and limbic regions, and inhibit frontal lobe activity."

The APB team intends to study two or three times more patients before reaching any final conclusions, reported Weinberger.

"There may be a number of defects in the limbic-frontal lobe arrangement in schizophrenics' brains, which would explain the many puzzling symptoms of this illness," he said. "We don't yet understand the underlying pathophysiology. But we now have some ideas and leads to pursue in our attempts to unravel this complex illness."

## DETECTING MARIJUANA

Scientists at the Addiction Research Center (ARC), National Institute on Drug Abuse, are determining the validity of three new immunoassay tests for detecting marijuana metabolites in urine.

Two of the tests—the EMIT-ST, manufactured by the Syva Company, and the Abuscreen radioimmunoassay (RIA), manufactured by the Roche Company—detected marijuana for 16 hours following one cigarette, and 24 to 32 hours after two cigarettes were smoked. The third test—a more finely calibrated one called EMIT-DAU, also manufactured by Syva—detected metabolites of the drug for nearly 40 hours following one cigarette, and 64 hours following two.

According to Dr. Charles Gorodetzky, ARC Scientific Director, "This information will be of value to clinicians and drug abuse programs," both for selecting which test to use for determining if metabolites of marijuana remain in a patient's body before beginning treatment, and for interpreting test results.

The tests are used by the Armed Forces and by law enforcement agencies for a variety of purposes, e.g., to detect if marijuana use is involved in a reckless driving accident.

All three immunoassays are designed specifically to detect the major human urinary metabolite of delta-9-THC, marijuana's psychoactive component.

"Our data show that marijuana cigarette smoking is detectable with high probability using these methodologies," Gorodetzky said. "We were surprised at the relatively short time course of validity, however. Based on information previously available, we had expected the time course to be up to a week or even longer."

He pointed to a possible reason for the difference between expectations and scientific findings: "Most of the previous information was anecdotal or came from outpatient studies, where control of drug intake is less than optimal. At ARC, on the other hand, we used highly controlled procedures to gather the data."

ARC undertook the project both to document how long the new methods can pinpoint marijuana in the urine and to ascertain the comparability of results among the three techniques. Such rapid, inexpensive tests for detecting marijuana have become available only quite recently. Their development was stimulated by NIDA as more and more evidence accumulated on harmful consequences of marijuana use.

ARC thus far has analyzed urine samples from only 5 subjects in the validation project. According to Gorodetzky, 5 more must complete the research protocol before findings can be considered conclusive.

Another unexpected finding surfaced when the ARC team examined data from each subject separately. "We discovered considerable variability among individuals in the length of time that marijuana can be detected in their urine," Gorodetzky said.

"This presents a challenging task for further study. We will have to look closely at the detailed medical histories we took on all subjects before they began the protocol,

**Clockwise from upper left: device used to monitor brain activity; subject performs card sort test; Dr. Holder; graphic illustration of simulated drunk-**

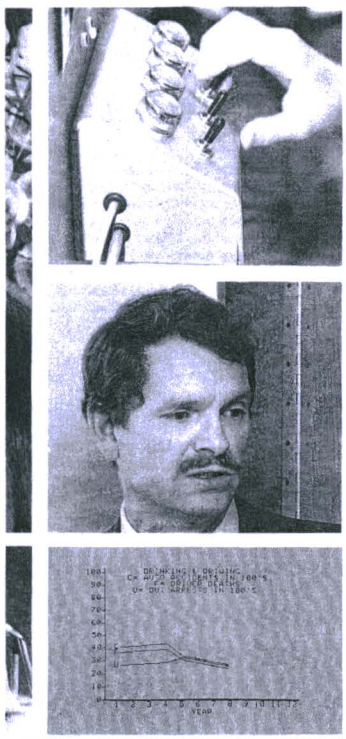
# :SS SEMINAR

by James Helsing

and especially at their marijuana use histories, to see if there may be some correlation between previous levels of use and variations in duration of detectability."

All subjects were male volunteers between ages 25 and 55 who gave histories of light to moderate marijuana use and cigarette smoking. All were in good health and had at least 1 week of negative urine samples for all drugs before beginning the protocol.

Urine samples were analyzed in random order under blind conditions using the



**driving statistics; computer which produced the simulated graphic; Dr. Charles Gorodetzky**

EMIT-DAU, EMIT-ST, and Abuscreen RIA methods. Comparison of results from the three screening tests showed a high concordance between RIA and EMIT-ST, with only 18 of the 742 analyses discordant. Both tests showed a greater discordance compared to EMIT-DAU, reflective of the greater sensitivity of the latter.

Gorodetzky's co-investigators were Dr. Rolly Johnson at ARC's Baltimore facility and Dr. Edward Cone at its Lexington, Ky., laboratories.

## REDUCING ALCOHOL PROBLEMS

Using a new computer simulation model they developed to reflect the many complex factors involved in a community's use of alcohol, NIAAA grantees have demonstrated that it is hypothetically possible to reduce the alcohol problems in a community by applying various combinations of prevention approaches.

Calling the simulation model "a research tool," its developers, Dr. Harold Holder and James Blose of the Human Ecology Institute, Chapel Hill, N.C., say it can assist public policymakers in choosing among various options available for tackling alcohol abuse in their communities.

Current prevention strategies generally deal with the individual's alcohol use and abuse. The approach developed at the Human Ecology Institute, however, considers the "total system" or environment in which drinking takes place. The computer is used to simulate a specific community and show what changes could be expected in the community's alcohol abuse problems if various prevention strategies, or combinations of strategies, were to be used.

Prevention strategies entered into the computer fall into two categories: those which can alter alcoholic beverage consumption patterns, and those which directly affect drinking and driving behavior.

Simulated options in the first category are:

- Raising the minimum drinking age for all alcoholic beverages to 21.
- Adjusting the price of all beverages to the consumer price index each year.
- Raising the retail price of all alcohol beverages by 25 percent (a one-time increase).
- Reducing high-risk alcohol consumption through public education.

Options simulated to affect drinking and driving were:

- Lowering the legal intoxication limit to .08 percent blood alcohol level (now .10 in most jurisdictions).
- Creating a five-fold increase in drivers' perceived risk of arrest and conviction for driving under the influence of alcohol (DUI).
- Increasing actual level of enforcement by 25 percent.
- Increasing the DUI conviction rate by 50 percent.

The simulation was tested in three communities which differed in size and type: Wake County, N.C.; Washington County, Vt.; and Alameda County, Calif. The researchers projected the probable effect through 1994 of adopting each strategy, or combination of strategies, on three alcohol-related problems—traffic safety, family disruptions, and work problems.

According to the projections, the quickest results would be achieved by applying several strategies in one category simultaneously. For instance, adopting all four anti-drinking and driving steps would immediately reduce traffic accidents, ranging from a 6.9-percent reduction in Washington County, Vt., to 11.4-percent in Wake County, N.C.

"Raising the minimum drinking age alone produced a more modest, but sustained, reduction in the North Carolina and Vermont communities," Holder pointed out. (The legal drinking age in California already is 21).

"For the long-term, combining a community education program with indexing the price of alcoholic beverages to the Consumer Price Index produced the largest potential impact," Holder said. This resulted in a drop of 81 alcohol-related accidents per year in Wake County, 48 less accidents in Washington County, and 72 less in Alameda County.

Holder cautioned, however, that the type of community education project which would achieve the greatest reduction also would require a significant commitment of community resources, "more than just a couple of TV spot announcements."

Community education and price indexing together showed the largest immediate drop in family problems related to alcohol abuse, ranging from 13.7 percent in Wake County to 14.5 percent in Washington County.

"Over the long term, these two interventions reduced family disruptions by 11-12 percent in all 3 communities. In the 'real' world, this would be a significant achievement," Holder said.

"For reducing alcohol-related work problems, the scenario combining an education program and indexed beverage prices again proved most effective," he reported. This strategy resulted in short-term reductions between 7.8 percent in Washington County and 11.1 percent in Alameda County.

"Much of this impact dissipated over time, however, and would require a further prevention impetus," he added.

Holder stressed that the computer model does not specify which particular prevention approaches a community should take; rather, it can make information available to decisionmakers on a range of options and their projected payoff.

"The first step in applying the model in a community is to gather baseline data on the current alcohol 'system' in a community—such things as patterns of alcohol use in various age groups (including quantity and frequency of consumption), rates of intoxication, number of alcoholic beverage outlets and their hours of operation, existing regulations and controls, and numerous other factors.

"Next, community leaders have to decide what results they hope to achieve. Our model is a device for projecting which actions could help them reach their goals," he said. "It assumes that public support exists and technology is available to carry out the strategies.

# NIMH COUNCIL

by Myrle Kahn

*Meetings of the three ADAMHA Institute Advisory Councils begin with a lengthy policy session, open to the public, where staff report to Council members on current developments, and policy issues are discussed. The following are highlights from the fall meeting of the National Advisory Mental Health Council*

**Research on Cognitive Processes**

To understand the role of cognition in different types of neuropsychiatric disorders, scientists in the NIMH Laboratory of Psychology and Psychopathology are examining the ways that cognition can fail through different mechanisms in disorders, reported Dr. Herbert Weingartner.

The studies rely on the use of drugs that affect cognition by acting upon neurotransmitter systems. Certain drugs are being used to mimic ways that cognition can fail, while other drugs which enhance cognitive processes are demonstrating how such processes can be altered.

**Research on Dementias**

"We now have a good shot at developing effective treatment for at least some subtypes of previously untreatable dementias," reported Dr. Thomas Crook, NIMH Center for Studies of the Mental Health of the Aging. Dramatic progress over the past decade in understanding Alzheimer's Disease and other dementias holds promise for the 1.5 million Americans who suffer from these disorders, Crook added.

In a related report, NIMH Director Herbert Pardes announced that Dr. Gene Cohen of the Aging Center has been named executive secretary of an HHS Alzheimer's Disease Task Force. He will be working closely with staff from the National Institute on Neurological and Communicative Disorders and Stroke and the National Institute on Aging.

Lindsley Williams, Director, Office of Policy Development, Planning, and Evaluation, reported that members of Congress have identified financing of treatment of Alzheimer's Disease as a major reimbursement issue.

**Research on Young Chronic Patients**

Chronic mental patients age 18-44 make up an increasingly large percentage of State and county hospital populations. These patients are completely unlike the stereotype of the compliant severely disabled patient; they tend to be transient, to actively resist treatment, and to suffer multiple problems (especially alcohol and drug abuse).

NIMH has pinpointed their most pressing service needs, including:

- better identification of subcategories of young chronic patients, and services appropriate to each subcategory,
- complete patient evaluations, and assignment of trained case managers,
- service settings which fall somewhere between the restrictiveness of hospitals and the freedom of community programs,
- clinical training to help prevent "burnout" among staff working with young chronic patients.

(The "Young Chronic Patients" Council report was delivered by Drs. James Thompson and Ronald Manderscheid of the Division of Biometry and Epidemiology; James Stockdill, Office of State and Community Liaison; and Lindsley Williams.)

**Research on Sexual Assault**

Since its creation in 1976, the National Center for Prevention and Control of Rape has been funding scientific investigations of the impact of sexual assault on victims of all ages and their loved ones, as well as studies of sexual offenders. As the incidence of such assaults continues to increase, the Center is seeking a greater number of strong research applications. It especially hopes to attract new investigators and help develop improved methodologies for studying this sensitive subject.

Following a recommendation for increased technical assistance made at a meeting of members of the Council and the Rape Prevention and Control Advisory Committee this past spring, the Center has appointed a consultant to help provide technical assistance to grantees. Future conferences are planned on development of research in the field.

(The "Sexual Assault" Council report was delivered by Dr. Ann Maney, new Chief of the Rape Center, and Dr. Mary Lystad, former Rape Center Chief, who now heads the NIMH Center for Mental Health Studies of Emergencies.)

**Director's Report**

NIMH Director Herbert Pardes informed Council that:

- Private efforts to promote mental health activities in the United States are on the rise and recently have involved such organizations as the new American Schizophrenia Foundation, the American Mental Health Fund, and the Manic-Depressive Association.
- Congress is considering a move to enable the Institute to support 16 additional clinical training grants for FY 1984.

Pardes also thanked three retiring Council members—Dr. Anne Davis of the University of California, San Francisco; Dr. W. Douglas Skelton of the Emory University School of Medicine, Atlanta, Ga; and Dr. Layton McCurdy of the Institute of Pennsylvania Hospital, Philadelphia—for their outstanding service to the Institute.

# PEOPLES' DRUG CAMPAIGN

A national drug store chain will spend an estimated $1 million this fall to alert parents about the dangers of alcohol and drug use among youth.

"Your Kids and Drugs: Spot It, Stop It" is an aggressive public education campaign launched by Peoples Drug Stores, Inc., with the cooperation of the National Institute on Alcohol Abuse and Alcoholism and the National Institute on Drug Abuse.

In the coming months, all 500-plus Peoples Drug Stores in 13 States and the District of Columbia will provide a series of free pamphlets to customers on such topics as "How To Tell If Your Children Use Drugs," "Alcohol...The Most Abused Drug in America," and "The Dangers of Marijuana."

The pamphlets' messages (which were developed with the help of NIAAA and NIDA staff) will be repeated on radio and television public service announcements sponsored by the drug store chain.

The campaign was announced at an October 6 Capitol Hill press conference called by Senator Gordon Humphrey (N.H.), Chair, Senate Subcommittee on Alcoholism and Drug Abuse. Humphrey shared the podium with three of his colleagues, Senator Dan Quayle (Ind.), Rep. Henry Waxman (Calif.), and Rep. Michael Barnes (Md.). They were joined by Sheldon Fantle, President, Peoples Drug Stores; Mary Jacobson, Chair, National Federation of Parents for Drug-Free Youth; Dr. Robert Niven, NIAAA Director; and James Lawrence, NIDA Deputy Director.

"There is no better protection against drug abuse than an informed parent," said Fantle. "We want our new public information program to give parents the facts they need to face drug problems and save their children from the terrible consequences of alcohol and drug abuse."

Lawrence noted that "in 1982, the percentage of high school seniors who attributed great risk to regular marijuana use rose to 60 percent, compared to 35 percent only 4 years earlier." To a great extent, he said, this heightened awareness is the result of public education activities like the Peoples Drug campaign.

Niven also praised the drug store chain, saying, "I am gratified to see this kind of cooperation between the public and private sectors, and I commend Peoples for its initiative."


**Dr. Robert Niven, Mary Jacobson, Sheldon Fantle**

# INHALANTS

by Walter Clark

Getting high by sniffing glue, shoe polish, or gasoline is much more popular among young Mexican-Americans than among young blacks or Anglos from similar low income neighborhoods, a Texas A&M University study reveals.

In research involving 715 youths from a variety of ethnic backgrounds, 47 percent of Mexican-American clients in early intervention counseling were found to have used such "inhalants," while only 10 percent of the black and 17 percent of the Anglo youths had done so.

The results show that the frequency of inhalant use is related to several other problems. Among the Mexican-American youth who were chronic inhalant users, almost all did poorly in school and had unsatisfactory home and social lives. Many also were in trouble with the law.

Problems tended to moderate among those who used inhalants less frequently.

The study also reveals that inhalers are quick to use other substances such as alcohol or marijuana when they are available, reinforcing the theory that inhalants may be simply a cheap and convenient drug of opportunity, according to the investigators.

The ancient maxim about "birds of a feather" seems to follow for inhalers, since they flock to groups that have similar school, family, and personal problems. For example, friends of chronic inhalers are significantly more likely to dislike their teachers, cut classes, and commit acts of vandalism that friends of non-users or experimental inhalers.

In standardized tests designed to reveal family dynamics, families of inhalers generally showed poorer communication skills and lower levels of academic achievement than the families of non-inhalers.

Abstainers as a group scored much higher in orientation toward academic achievement, were involved in sports and social activities, and related well with their parents and friends.

Further information is available from the principal investigators, Drs. Maryann Santos de Baronal and D. Dwayne Simpson, Behavioral Research Program, Texas A&M.

# ADAMHA HONOR AWARDS

The Administrator's Award for Meritorious Achievement is presented each year in recognition of meritorious achievement and contributions of an extraordinary nature by an employee or group of employees of ADAMHA.

G. Peter Arnott, Ph.D.

Associate Director, Fellowship Programs
Center for Research Personnel Development
Division of Human Resources
National Institute of Mental Health

"For outstanding scientific and administrative competence in utilizing the National Research Service Award Program."

George M. Beschner

Supervisory Public Health Analyst
Treatment Research Branch
Division of Clinical Research
National Institute on Drug Abuse

"For managerial, research, written, and other contributions to knowledge development in the drug abuse field."

Eugenia P. Broumas

Social Science Program Specialist
Office of Extramural Project Review
Office of the Director
National Institute of Mental Health

"For outstanding performance in assuring fair, equitable, and timely Clinical Training and Community Support Program reviews under exceptionally difficult circumstances."

Paul E. Collins

Technical Publications Editor
Research Dissemination Branch
Division of Prevention and Research Dissemination
National Institute on Alcohol Abuse and Alcoholism

"For sustained exemplary performance in assuring production of timely, high quality NIAAA publications."

Eleanor C. Friedenberg, R.N., M.S.

Deputy Director
Division of Prevention and Special Mental Health Programs
National Institute of Mental Health

"For outstanding performance in the management of programs of a Division undergoing realignment and reorganization of its mission."

Richard Hawks, Ph.D.

Supervisory Chemist
Research Technology Branch
Division of Preclinical Research
National Institute on Drug Abuse

"For leadership in developing, and expertise in utilizing, drug detection methodologies."

Dorothy L. Herman

Grants Technical Assistant
Office of Extramural Project Review
Office of the Director
National Institute of Mental Health

"For outstanding achievement and effective use of staff in providing technical support for the 1983 Clinical Training and Community Support reviews."

Werner A. Klee, Ph.D.

Research Chemist
Laboratory of General and Comparative Biochemistry
Division of Intramural Research Programs
National Institute of Mental Health

"For sustained high quality research in elucidating biochemical mechanisms, underlying actions of opiates and opioid peptides."

Walter A. Leginski, Ph.D.

Statistician
Services Research Resource Branch
Division of Biometry and Epidemiology
National Institute of Mental Health

"For sustained exceptional performance in achieving State/Federal collaboration on uniform data for improved program management."

F. Barrie Montague

Special Assistant to the Director
Office of Policy Analysis
National Institute on Alcohol Abuse and Alcoholism

"For national leadership in analyzing the impact of alcoholism treatment on cost and utilization of general medical care, and contributing to the nationwide expansion of health insurance coverage of alcoholism treatment."

Robert F. Prien, Ph.D.

Chief
Affective Disorders Section
Pharmacologic and Somatic Treatments Research Branch
Division of Extramural Research Programs
National Institute of Mental Health

"For originating and successfully completing a multicenter clinical trial of long term somatic treatment of affective illness."

Betty J. Turner

Budget Analyst
Planning and Financial Management Branch
Office of Planning and Resource Management
National Institute on Alcohol Abuse and Alcoholism

"For outstanding dedication and service as a senior analyst of the Planning and Financial Management Branch."

Carolyn Zahn-Waxler, Ph.D.

Research Psychologist
Laboratory of Developmental Psychology
Division of Intramural Research Programs
National Institute of Mental Health

"For sustained high quality of research elucidating affective development of children of depressed parents."

Joan White

Program Analyst
Office of Policy Analysis
National Institute on Alcohol Abuse and Alcoholism

"For skilled and insightful liaison which has increased the Institute's visibility and creditability on alcohol and highway safety issues and its contribution to prevention of this major public health problem."

# GROUP AWARDS

Personnel Operations Branch
Division of Personnel Management
Office of Management
Office of the Administrator

"For meritorious accomplishment in conducting classification surveys and implementing reorganizations in OA and NIAAA."

Jeremiah Jenkins
June Lenkin
John Mullins
Mary Rose
William Seck
Earle Stalfort
Suzanne Ryan

Prevention Branch
Division of Prevention and Communications
National Institute on Drug Abuse

"For creatively designing and implementing a new service delivery system for drug abuse prevention."

Roy Bailey
Thomas E. Collins
Bee Hamlin
Patricia Heister
Bernard R. McColgan
Arnold Mills
Cynthia J. Perry
Maureen E. Sullivan
Cheryl Wims

National Clearinghouse for Drug Abuse Information
Division of Prevention and Communications
National Institute on Drug Abuse

"For meritorious performance in providing a variety of information services to the general public and to the scientific, congressional, and other specialized communities."

Simone Demers
Ellen Forsell
Bernice Genovese
Armenta Jackson
Claudene Neal
Bette Shannon
Angela Theophile
Ilse Vada

Public Inquiries Section
Science Communication Branch
Division of Communications and Education
National Institute of Mental Health

"For extraordinary dedication and productivity in fulfilling the information needs of the Nation's depressed citizens."

Mabel Morgan
Dorothy Parmele
Mattie Smith
William Tetlow
Edith Tyler

SEH-MPDC Family Crisis Intervention Training Program
Saint Elizabeths Hospital
National Institute of Mental Health

"For meritorious service to Saint Elizabeths Hospital-Metropolitan Police Department of the District of Columbia Family Crisis Intervention Training Program."
Anna Anders, M.S.W.
Dale Richard Buchanan, M.S.
Monica L. Callahan, Ph.D.
Laura Cearnal, R.N., M.S.
William H. Dobbs, M.D.
Ava M. Echols
Cynthia Eckard
Vallory G. Lathrop, D.N.Sc., F.A.A.N.
William B. Lawson, M.D.
Jessica Myers, M.A.
Robert Randle, Ph.D.
Sarah Reagan, Ph.D.

Center for Prevention Research
Division of Prevention and Special Mental Health Programs
National Institute of Mental Health

"For meritorious achievement and outstanding performance in the accomplishment of ADAMHA's prevention initiative."
May R. Aaronson
Anita G. Eichler, M.A.
Doreen S. Koretz, Ph.D.
Victoria S. Levin, M.S.W.
Maury Lieberman, M.U.R.P.
Raymond P. Lorion, Ph.D.
Lorraine M. Miller
Thomas C. Owan, M.S.W.
Deborah M. Pratt
Morton M. Silverman, M.D.
Jane A. Steinberg, Ph.D.
Faye K. Vlahos
Herbert H. Vreeland, Ph.D.

## ADMINISTRATOR'S AWARD
## For Equal Employment Opportunity Achievement

Peter M. Crawford
Program Analyst
Office of Program Planning, Analysis, and Legislation
Office of the Administrator

"For professional and personal commitment to EEO principles as demonstrated by numerous achievements in promoting EEO throughout ADAMHA."

## ADAMHA Recipients of Other Major Awards

- DISTINGUISHED SERVICE AWARD: Hazel W. Rea, NIMH
- SECRETARY'S SPECIAL CITATION FOR TEN OUTSTANDING EMPLOYEES OF THE YEAR: Pamela J. Mitchell, NIMH
- DEPARTMENTAL MANAGEMENT AWARD; Betty J. Humphrey, NIMH
- PHS SUPERIOR SERVICE AWARD: Michael E. Fishman, M.D., NIMH; Joyce B. Lazar, NIMH; Sam Silverstein, Ph.D., NIMH; Kenneth Warren, Ph.D., NIAAA
- ASSISTANT SECRETARY FOR HEALTH'S AWARD FOR EXCEPTIONAL ACHIEVEMENT: Irene Young, R.N., NIMH
- PHS SPECIAL RECOGNITION AWARD: Cuban/Haitian Mental Health Unit, NIMH; Michael J. Eckardt, Ph.D., NIAAA; Mary H. Lystad, Ph.D., NIMH
- COMMISSIONED CORPS MERITORIOUS SERVICE MEDAL: James A. Ferguson, NIDA; Herbert Pardes, M.D., NIMH
- A.E. BENNETT NEUROPSYCHIATRIC RESEARCH FOUNDATION AWARD: William Freed, M.D., NIMH; Larry Siever, M.D., NIMH; Thomas Uhde, M.D., NIMH
- AMERICAN PSYCHIATRIC ASSOCIATION FOUNDERS' FUND PRIZE: Robert Post, M.D., NIMH
- INVENTOR'S AWARD: Carl Merril, M.D., NIMH; Steven Paul, M.D., NIMH
- MEMBER, NATIONAL ACADEMY OF SCIENCES, INSTITUTE OF MEDICINE: Edwards Evarts, M.D., NIMH
- AMERICAN PSYCHIATRIC ASSOCIATION ITTLESON AWARD FOR RESEARCH IN CHILD PSYCHIATRY: Judith Rapoport, M.D., NIMH
- ANNA MONIKA FOUNDATION AWARD: Irwin Kopin, M.D., NIMH
- ARTHUR S. FLEMMING AWARD: Steven Paul, M.D., NIMH
- CARL SPENCER LASHLEY AWARD IN NEUROBIOLOGY: Edward Evarts, M.D., NIMH
- EDWARD A STRECKER AWARD: Frederick Goodwin, M.D., NIMH
- MEMBER, NATIONAL ACADEMY OF SCIENCES: Giulio Cantoni, M.D., NIMH

# COMMISSIONED CORPS AWARDS

## COMMENDATION MEDAL

Richard Coppola, D.Sc.
Senior Engineer Officer
Laboratory of Psychology and Psychopathology
Division of Intramural Research Programs
National Institute of Mental Health

"For organizing the procurement of a new PET scanner to further NIMH and other NIH research programs; and for important refinements in EEG-brain imaging technology."

Stephen E. Gardner, D.S.W.
Supervisory Public Health Analyst
Prevention Branch
Division of Prevention and Communications
National Institute on Drug Abuse

"For outstanding accomplishments in NIDA's national prevention technical assistance program and for development and implementation of Channel One, a national public/private program initiating community sponsored drug abuse prevention programs."

James C. McCann, R.N., D.N.Sc.
Deputy, Medicare Program Operations
Community Mental Health Services Support Branch
Division of Mental Health Service Programs
National Institute of Mental Health

"For providing outstanding technical assistance and consultation to psychiatric hospitals receiving Title XVIII and Title XIX funds."

# PHS OUTSTANDING SERVICE MEDAL—COMMISSIONED CORPS

Edgar Adams

Associate Director for Epidemiology
Division of Data and Information Development
National Institute on Drug Abuse

"For conceptualization and development of the NIDA Epidemiology Plan, and for increasing public awareness of the dangers of cocaine and "Look-Alike" drugs."

John Bartko, Ph.D.

Theoretical Statistics Branch
Division of Biometry & Epidemiology
National Institute of Mental Health

"For outstanding scientific initiative and leadership in the development and application of statistical methodology to the area of mental health research."

Thomas H. Bornemann

Health Services Officer
Cuban/Haitian Mental Health Unit
National Institute of Mental Health

"For outstanding leadership as the Chief Social Worker of the Cuban/Haitian Mental Health Unit (CHMHU) central office."

Gary L. Chadwick, D. Pharm.

Community Mental Health Services Support Branch
Division of Mental Health Service Programs
National Institute of Mental Health

"For exceptional service in the health and mental health care and treatment of Merchant Seamen who are wards of the Federal Government."

Brian W. Flynn, Ed.D.

Chief Psychologist
Cuban/Haitian Mental Health Unit
National Institute of Mental Health

"For high quality leadership, creativity, and dedication as Chief Psychologist and Project Generation Officer of the Cuban/Haitian Mental Health Unit."

Charles Gorodetzky, M.D., Ph.D.

Associate Director for Clinical Research
Addiction Research Center
National Institute on Drug Abuse

"For outstanding contributions to the continuation of the highly productive and successful Addiction Research Center preclinical research program."

Ira S. Lourie, M.D.

Assistant Director for Children's Mental Health Services
Office of State and Community Liaison
National Institute of Mental Health

"For his pioneer efforts on behalf of adolescent victims of child abuse and neglect."

William G. Prescott, M.D.

Medical Director
Cuban/Haitian Mental Health Unit
National Institute of Mental Health

"For outstanding dedication, creativity and leadership in the successful establishment of comprehensive mental health services to Cuban and Haitian Entrants."

Thomas C. Voskuhl

Acting Assistant Director for Program Management and Evaluation
Division of Prevention and Communications
National Institute on Drug Abuse

"For outstanding continuous leadership in planning and implementing major program changes under difficult circumstances."

Joseph A. Zogby

Health Services Officer
Cuban/Haitian Mental Health Unit
National Institute of Mental Health

"For outstanding leadership in carrying out the mission of the Cuban/Haitian Mental Health Unit as the Officer in Charge of the Unit's detachment."

Donald R. Jasinski, M.D.

Scientific Director for Clinical Research
Addiction Research Center
National Institute on Drug Abuse

"For outstanding accomplishments related to the relocation and re-establishment of the program of the Addiction Research Center."

# PHS PLAQUE

## COMMISSIONED CORPS

Jeffrey Boyd, M.D.

Research Psychiatrist
Center for Epidemiologic Studies
Division of Biometry and Epidemiology
National Institute of Mental Health

"For superior performance in applying epidemiologic principles to psychiatric research and outstanding contribution in computer applications to the NIMH DIS III."

Peter L. Putnam, M.D.

Medical Director
O'Malley Division
Saint Elizabeths Hospital
National Institute of Mental Health

"For creativity and innovation in resolving many clinical and administrative concerns regarding issues of deinstitutionalization and less restrictive environments for the mentally ill."

Marilyn Vranas, R.N., M.S.

Chief Nurse
Mental Health Program for the Deaf
Saint Elizabeths Hospital
National Institute of Mental Health

"For noteworthy achievements in nursing for the Mental Health Program for the Deaf at Saint Elizabeths Hospital."

# INTERNATIONAL DRUG STUDY

by Judy Folkenberg

An international comparative study of drug use in the United States and 10 Western European countries shows that Belgians take the most minor tranquilizers while American use falls about in the middle.

The prevalence rates vary from 17.6 percent in Belgium to 7.4 percent in the Netherlands, while the U.S. prevalence rate is 12.9 percent, according to Dr. Mitchell Balter, Chief of the NIMH Applied Therapeutics and Health Practices Program, who conducted the survey with international colleagues.

Compared to the European countries, says Balter, "the United States emerges as a nation that is moderate on overall prevalence rate, strongly disposed toward shorter periods of daily use, and average with respect to its share of long-term regular users."

Patterned after a 1971 cross-national household survey of anti-anxiety/sedative drug use, the 1981 study sought reliable international data to help place U.S. medication practices within an appropriate international perspective. Data were compiled on past-year prevalence as well as duration and frequency of daily use.

For all countries, Balter reports, there was very little correlation between prevalence and long-term use. In fact, the most frequent pattern of use was daily intake for less than 1 month.

Switzerland, Denmark, and Sweden had the smallest proportion of long-term users. In Belgium and France, nearly one-third of the past-year users had taken minor tranquilizers for 12 months or more—a substantially higher proportion than in any other country studied.

One of the study's most striking findings, in Balter's view, is the "universal and continuing predominance of women" among long-term sedative users. At every age level in every country surveyed, twice as many women as men took tranquilizers.

"Despite heavy cultural emphasis over the past decade on parity in sex roles and lifestyles," says Balter, "and despite widespread publicity about the possible overuse of minor tranquilizers by women, sex differences in prevalence rates for the use of anti-anxiety/sedative medications have not changed: they are about the same as they were in 1971."

However, Balter warns, the difference should not give rise to disparaging notions about women: they may be more rational health consumers and more likely to seek treatment when needed, he concludes.

One implicit finding from this study, Balter notes, is the need to design research that looks at a variety of drug use measures. High rates of drug use in a country do not automatically indicate long-term drug use. Drug incidence studies also should include duration of daily use and the total number of days used, he points out.

## ADAMHA NEWS GOES MONTHLY

With this issue, in new size and format, *ADAMHA News* becomes a monthly. The new schedule permits a reduction in subscription price from $29 a year to $15 domestic ($18.50 for foreign subscribers).

# STAFF NEWS

## CFC CAMPAIGN

ADAMHA employees are once again reaching into their hearts and pocketbooks to help others who are less fortunate as the annual Combined Federal Campaign gets underway.

Last year, agency staff pledged $60,084 to help their community and neighbors. This year, the goal is $62,000.

James Lawrence, Deputy Director, NIDA, is serving as Chairperson of the drive. Coordinators representing the three Institutes and OA are:

Mildred Lehman, Associate Administrator for Communications and Public Affairs, OA.

Dr. Darrel Regier, Director, Division of Biometry and Epidemiology, NIMH.

Fulton Caldwell, Consumer Affairs/EEO Officer, NIAAA.

Lorraine Ferguson, Program Analyst, NIDA.

Key workers throughout the agency have volunteered to collect the pledges.

Whether to give or not to give? In a recent article, the *NIH Record* summarized several of the most common arguments against giving to the campaign, and showed why the reasons for giving win out.

- *The CFC is an unnecessary middleman. I prefer to give directly to my favorite charity.*

By acting as sole middleman for more than 300 voluntary health and welfare agencies, the CFC keeps administrative costs of fundraising to nearly 4 cents for each dollar contributed. It costs an average of 25 cents per contributed dollar for individual agencies to directly solicit potential donors.

Further, the CFC monitors all recipient agencies to make certain that they are providing the services they claim and that all clients are served regardless of race, national origin, or ability to pay.

- *Politically oriented and advocacy organizations have no place in the CFC.*

Only gifts specifically designated for such groups will go to those 41 National Service Agencies. Undesignated gifts go only to the 287 traditional charities of the National Health Agencies, the United Way, and the International Service Agencies.

- *There's no assurance that our designated gifts go to the agencies we designate.*

You can verify that your designated gift went to the agency you named by checking with that charity. Each charity gets a computer printout of the names of their designating contributors and the amounts.

- *Improper pressure is put on us to give to the CFC.*

HHS management is committed to avoiding *any type* of pressure. Strict regulations have been issued to avoid any coercion.

- *We have barely enough to meet our personal needs.*

But we have more than those who must seek help to survive. By making a small contribution each pay period, we can painlessly support those who critically need vital health and welfare services.

## BETTY SMITH

1923–
1983

Dr. Elizabeth Smith, Chief of the NIMH Center for State Human Resource Development, died suddenly October 16 of a massive heart attack while enroute to a New Hampshire State Conference on Community Support Programs.

A 20-year Federal employee, Smith held a Ph.D. in sociology and a master's degree in nursing education from Catholic University, and a master's degree in nursing from Yale University.

## VOLUNTEERS NEEDED

Volunteers between the ages of 18 and 40 are needed to participate in NIMH sleep studies. Volunteers must not be taking any medication nor have any past history of psychiatric treatment or any known medical illnesses. No drugs will be given in this study. For further information, call Sandy at 496-1056.

ALCOHOL, DRUG ABUSE, AND MENTAL HEALTH

# ADAMHA NEWS

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## PREVENTION CENTERS

Two ADAMHA Institutes have earmarked more than $8 million over the next 5 years to establish the agency's first four Prevention Research Centers.

The National Institute of Mental Health recently awarded grants for the first three of 12 Prevention Intervention Research Centers across the country. The grantees are:

- Albert Einstein College of Medicine of the Yeshiva University, New York City. This Center will study prevention of mental health problems among children afflicted with chronic physical illnesses and among their families.
- Hahnemann Medical College, Philadelphia. This Center will examine methods for developing "interpersonal cognitive problem-solving skills" to prevent mental illness.
- The Institute for Social Research, University of Michigan. This Center will look for ways to lessen the impact of "work transitions" on mental health.

The National Institute on Alcohol Abuse and Alcoholism, which currently funds eight Alcohol Research Centers, is expanding its national network with a new Prevention Research Center at the Pacific Institute for Research and Evaluation (Lafayette, Calif.).

All four grantees are regarded as scientific pioneers in the relatively young field of ADM prevention research. The earliest prevention studies typically were carried out by service providers with limited attempts at rigorous evaluation or followup. Over time, research methodologies caught up with the special needs of prevention projects, and the scientific rigor of recent prevention studies has increased dramatically.

The new centers will transcend one-shot studies and instead develop comprehensive research *programs* where teams of scientists can collaborate on series of related projects—and ultimately build a body of knowledge on ADM prevention that works.

To ensure the quality of the projects, NIMH's Center for Prevention Research has engaged three evaluation experts—Dr. Donald Campbell of Lehigh University, Dr. Robert Rich of Carnegie-Mellon University, and Dr. Robert Perloff of the University of Pittsburgh—to help the Centers design an evaluation plan for all phases of work.

Scientists at the Einstein center will examine how mental health interventions work at various times in the lives of children with such disorders as diabetes, asthma, and birth defects. Three separate research components will study young patients and their families during infancy, middle childhood, and adolescence.

Interventions will be developed according

*See PREVENTION CENTERS (page 11)*

*From top: Dr. Edward Brandt, Dr. Norman Sartorius, Dr. Juan de la Fuente, Dr. Robert Niven*

## WHO-NIAAA LINKUP

The World Health Organization has designated the National Institute on Alcohol Abuse and Alcoholism as its first International Collaborating Center for Research and Training on Alcohol Problems.

The move reflects the heightened international attention of health officials to problems of alcoholism and alcohol abuse.

The collaborating center was officially designated at a November 2 ceremony at the Pan American Health Organization in Washington, D.C. A four-year project, it will encourage collaboration in alcohol studies and exchange of information among U.S. scientists and researchers from other nations.

The ceremony featured an international alcohol research seminar and addresses by national and international public health officials and speakers from private organizations concerned with alcohol abuse and alcoholism. A 2-day workshop on "Early Identification of Alcohol Abuse" also was held.

"Getting on top of a problem of [this] size and nature requires. . .relying on friends, allies, and supporters from all sectors of government, from the population in a country, and from many countries," said Dr. Norman Sartorius, Director, WHO Division of Mental Health, at the ceremony.

"Finding friends and allies in the battle against alcohol-related problems is not easy," he stated. "Many countries do not have a serious alcohol problem, others do not give these problems a high priority, and most countries have different views of 'collaboration'," he held.

"Many of these constraints are of relevance for cooperation on any health problem; in the alcohol field, however, they are compounded by the complexity of the phenomenon, by powerful economic considerations, by our ignorance about determinants of behavior, and by a formidable ideological and terminological confusion in the field." he said.

WHO has proposed to concentrate its alcohol efforts in two main directions: development of techniques for early identification of individuals at high risk for alcohol-related problems, and treatment and rehabilitation of people who have such problems.

*See WHO-NIAAA (page 4)*

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES December 1983 Volume IX Number 21

• National Institute on Alcohol Abuse and Alcoholism • National Institute on Drug Abuse • National Institute of Mental Health

# NIDA AIDS GRANT

by Kate Callen

The National Institute on Drug Abuse has awarded a $218,000 grant for the first major study to determine why intravenous (i.v.) drug users are the second largest risk group for acquired immune deficiency syndrome (AIDS).

The New York State Division of Substance Abuse will conduct the study in the New York City metropolitan area, home of more than 90 percent of the AIDS victims who are heterosexual i.v. drug users.

The New York researchers will examine the immune systems of i.v. drug users in hope of finding abnormalities that may play a role in the etiology of AIDS.

Public health experts agree that an infectious agent probably is involved in the syndrome. But they also believe that mere exposure to such an agent is only one factor in the transmission of AIDS, because the vast majority of people in high-risk groups do not contract the disease. One theory is that the small percentage of those who do succumb to AIDS probably had impaired immune systems that were not able to ward off the agent.

Working from this premise, the NIDA-funded scientists will compare immunological data—specifically, the ratio of T helper to T suppressor cells—from a case group of i.v. drug users with AIDS and a control group of AIDS-free i.v. drug users who are in methadone maintenance treatment. Because drug users who voluntarily apply for treatment often are suffering from acute medical problems, the case-control study will include a second control group of i.v. drug users who have been arrested on various charges and are being referred for treatment.

The researchers expect to find abnormal T helper/suppressor cell ratios in a portion of the AIDS-free drug users. These subjects form the cohort for a special longitudinal study to determine whether their immune abnormalities are temporary or are the kind of irreversible problem associated with AIDS. The abnormalities also will be compared with immunological data on homosexual men, who constitute the highest number of AIDS patients.

Throughout the study, special efforts will be made to track some biological parameters of any AIDS-free subjects who later develop the syndrome.

To augment its immunological focus, the study also will measure a variety of lifestyle and other factors which have been implicated in AIDS. These include:

- factors that would increase exposure to the alleged AIDS agent, e.g., drug use habits (particularly sharing needles with other users), sexual activity, and contact with other members of high-risk groups
- factors that would increase susceptibility to AIDS after exposure to the agent, e.g., drugs thought to affect the immune system (such as heroin, marijuana, cocaine, and alcohol), and previous infections possibly related to AIDS

Another part of the study—an epidemiological cluster analysis of AIDS victims in neighboring New Jersey—may provide valuable information about AIDS transmission and predisposition.

Most of the large number of i.v. drug users in New York City buy and inject their drugs in "shooting galleries," where as many as 20 to 40 users share the same needle. This phenomenon would seem at least partly responsible for the unusually high incidence of AIDS among New York i.v. drug users; in other localities where "shooting galleries" are rare, so are AIDS cases among i.v. drug users.

New Jersey is one such locality. Only a small number of the State's i.v. drug users have developed the syndrome—and, while i.v. drug use occurs throughout the State, the AIDS cases are almost entirely clustered in northern New Jersey.

Under a NIDA subcontract, the New Jersey State Department of Health will study its "cluster" population of i.v. AIDS victims using the same focus on immunological and lifestyle factors as the New York study. Because the cohort is significantly smaller and more contained, the New Jersey researchers may be able to uncover direct linkages between cases. They also will explore the possibility that proximity to New York City has contributed to the incidence of i.v. AIDS cases in northern New Jersey.

ALCOHOL, DRUG ABUSE, AND MENTAL HEALTH
ADAMHA NEWS

ALCOHOL, DRUG ABUSE AND MENTAL HEALTH ADMINISTRATION

ACTING ADMINISTRATOR
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# NEW DRUG

Final figures from NIDA's Drug Abuse Warning Network (DAWN) for 1982 show that a total of 120,145 drug abuse "episodes" were reported by participating hospital emergency rooms during the year, and 3,040 drug abuse-related deaths reported by medical examiners.

"Alcohol-in-combination" with other drugs was the leading cause of both emergency room visits and deaths reported to DAWN in 1982, as it was in 1981. In 1982, 29,348 emergency room cases and 960 deaths were attributed to combining alcohol with other drugs.

Considering emergency room cases only, the next three ranking drugs in 1982 were diazepam (Valium), 13,258 episodes; heroin/morphine, 12,643; and aspirin, 6,868. These three drugs held the same ranks in 1981.

Cocaine moved up a notch in 1982, from 6th to 5th, as did marijuana, from 7th to 6th.

Two other illicit drugs made big jumps (albeit in opposite directions) in emergency room episodes from 1981 to 1982: PCP rose in rank from 19th to 7th rank, while methaqualone dropped from 5th to 10th.

*Cocaine moved up a notch, in 1982, from 6th to 5th, as did marijuana, from 7th to 6th.*

These two drugs showed similar shifts on medical examiner reports. PCP rose from the 18th-ranked cause of death reported in 1981 to 9th in 1982. Methaqualone dropped from 13th to 20th.

After "alcohol-in-combination" with other drugs, substances most frequently implicated in drug-related deaths were heroin/morphine, which caused or contributed to 832 reported deaths; codeine, 349 deaths; and amitriptyline (an antidepressant), 280 deaths.

Of the total drug abuse episodes reported by emergency rooms, 53.1 percent involved females and 46.9 males. Sixty percent were individuals under 30, and 12 percent were children between 6 and 17.

Nearly one-half of the emergency room episodes involved abuse of more than one drug. Suicide was the most frequent motive for drug abuse, cited by 40 percent of persons who came to emergency rooms.

Thirty-eight percent of the drug abuse emergency room cases were admitted to the hospital, 29 percent were treated and referred elsewhere for further care, and 29 percent were treated and released.

# DATA

| MOST FREQUENTLY MENTIONED DRUGS IN EMERGENCY ROOM EPISODES, 1982 | NUMBER OF ER MENTIONS | DRUG RANK IN 1982 | DRUG RANK 1981 |
|---|---|---|---|
| Alcohol-in-combination | 29,348 | 1 | 1 |
| Diazepam (Valium) | 13,258 | 2 | 2 |
| Heroin/Morphine | 12,643 | 3 | 3 |
| Aspirin | 6,868 | 4 | 4 |
| Cocaine | 6,190 | 5 | 6 |
| Marijuana | 5,295 | 6 | 7 |
| PCP/PCP combinations | 4,988 | 7 | 10 |
| Acetaminophen (Tylenol, Datril) | 4,643 | 8 | 8 |
| Flurazepam (Dalmane) | 4,036 | 9 | 9 |
| Methaqualone (Quaalude) | 3,797 | 10 | 5 |
| Codeine combinations | 3,642 | 11 | 11 |
| Amitriptyline (Elavil) | 3,014 | 12 | 12 |
| Diphenylhydantoin sodium (Dilantin) | 2,827 | 13 | 14 |
| Phenobarbital | 2,737 | 14 | 13 |
| Chlordiazepoxide (Librium) | 2,494 | 15 | 16 |
| Pentazocine (Talwin) | 2,454 | 16 | 15 |
| Methadone | 2,248 | 17 | 18 |
| d-Propoxyphene (Darvon) | 2,220 | 18 | 17 |
| Amphetamine | 2,133 | 19 | 19 |
| O.T.C. Sleep Aids | 2,063 | 20 | 23 |

| DRUGS INVOLVED IN DEATHS | SINGLE DRUG AND COMBINATIONS | SINGLE DRUG | *Medical Examiner Rank* IN 1982 | IN 1981 |
|---|---|---|---|---|
| Alcohol-in-combination | 960 | — | 1 | 1 |
| Heroin/morphine | 832 | 205 | 2 | 2 |
| Codeine | 349 | 34 | 3 | 3 |
| Amitriptyline (Elavil) | 280 | 81 | 4 | 4 |
| Diazepam (Valium) | 275 | 13 | 5 | 5 |
| D-Propoxyphene (Darvon) | 225 | 37 | 6 | 6 |
| Phenobarbital | 208 | 38 | 7 | 7 |
| Cocaine | 204 | 64 | 8 | 8 |
| PCP/PCP combinations | 153 | 59 | 9 | 18 |
| Methadone | 150 | 48 | 10 | 12 |
| Secobarbital (Seconal) | 150 | 35 | 11 | 9 |
| Acetaminophen (Tylenol, Datril) | 130 | 12 | 12 | 11 |
| Doxepin (Sinequan) | 104 | 38 | 13 | 14 |
| Ethchlorvynol (Placidyl) | 103 | 23 | 14 | 17 |
| Aspirin | 102 | 30 | 15 | 16 |
| Pentobarbital (Nembutal) | 95 | 30 | 16 | 10 |
| Glutethimide (Doriden) | 89 | 10 | 17 | 19 |
| Amobarbital (Amytol) | 84 | 4 | 18 | 15 |
| Flurazepam (Dalmane) | 82 | 12 | 19 | 20 |
| Methaqualone | 70 | 11 | 20 | 13 |

Among drug abuse deaths reported to DAWN, 35 percent involved a single drug, and 65 percent involved multi-drug use.

Sixty-two percent of the deaths were male and 38 percent female. Sixty-three percent were 30 or older, 35.5 percent were 18 to 29, and slightly more than 1 percent (36 cases) were age 10 to 17.

DAWN is a voluntary data reporting system operated by the National Institute on Drug Abuse. By identifying drugs or drug combinations most often resulting in adverse consequences, the system helps monitor drug abuse patterns and trends around the Nation. More than 800 emergency rooms and 84 medical examiners from 26 major metropolitan areas report to the system, providing a non-random sample covering approximately one-third of the U.S. population.

NIDA officials point out that the DAWN data do not necessarily reflect overall prevalence levels of drug abuse in the United States, since only episodes that result in medical emergencies or deaths are reported.

For DAWN purposes, "drug abuse" is defined as any non-medical use of a drug substance, including: using prescription drugs in a manner inconsistent with accepted medical practice; using over-the-counter drugs contrary to approved labeling; or using any illegal substance for psychic effect, dependence, or suicide.

# 'LOOK-ALIKES'

This year, NIDA's Drug Abuse Warning Network has added a "look-alike" drug category to monitor what has become a significant drug abuse problem, particularly among young people.

To date, at least 14 individuals have died following look-alike drug use, mostly from caffeine overdose. Twelve of these were females, 10 of whom were younger than 30.

From 1979 to 1982, stimulant use measured by NIDA's annual High School Senior Survey rose from 24 to 36 percent in lifetime prevalence—and look-alike drugs have been implicated in a significant portion of this increase, perhaps as much as 20 percent. The 1982 Survey, the first to distinguish these products from amphetamines, placed lifetime prevalence of look-alike drug use among seniors at 15 percent.

Look-alikes are so called because they mimic prescription stimulants (such as amphetamines) and depressants (such as methaqualone) in size, color, shape, or markings. They also produce similar effects: look-alike "uppers" contain one or more of the nonprescription stimulants caffeine, phenylpropanolamine (PPA), or ephedrine, while look-alike "downers" use antihistamines to produce tranquilizing effects. ("Act-alike" drugs use the same ingredients but do not physically resemble controlled substances.)

Several well-documented reports have linked ingredients in look-alike drugs to severe hypertension with cerebral hemorrhage and death. Caffeine, PPA, and ephedrine can affect the central nervous and circulatory systems strongly enough to trigger a range of excitable disorders, from insomnia and anxiety to tachycardia.

However, these ingredients produce a less marked impact than the amphetamines they mimic; consequently, large quantities of look-alikes are required to produce desired euphoria. At such high dose levels, the cardiovascular system is under considerable stress and may fail in susceptible persons.

As the look-alike problem has grown to national proportions, it has begun to receive national attention. As of September 1983, 43 States had passed laws banning the distribution of these products. On November 18, the Food and Drug Administration sent letters to 350 look-alike manufacturers and distributors announcing new rules which outlaw the marketing of stimulants with any active ingredient other than caffeine.

In the past, hospitals and emergency rooms that comprise the DAWN system recorded look-alike episodes either as mentions for amphetamines or, if known to be look-alikes, as separate mentions for caffeine, PPA, or ephedrine. Last year, NIDA sent an alert to the DAWN hospitals which listed all known markings used to identify look-alikes. The new DAWN look-alike category is a further step in the Institute's efforts to track abuse of these substances throughout the country.

# WHO LINKUP

from p. 1

In 1984-85, WHO's advocacy will focus on alcohol and driving, drinking during pregnancy, and alcohol abuse among youth, Sartorius said. In 1986-87, alcohol in industry may be added, and in 1988-89, multiple drug use.

"Coordination of research, too, has limited objectives," Sartorius told the international group of scientists and public health officials. "In the immediate future, major emphases will be placed on multicentric research that can develop or adapt technology necessary to deal with alcohol in primary care, and on coordination of research on the biological basis of alcohol dependence."

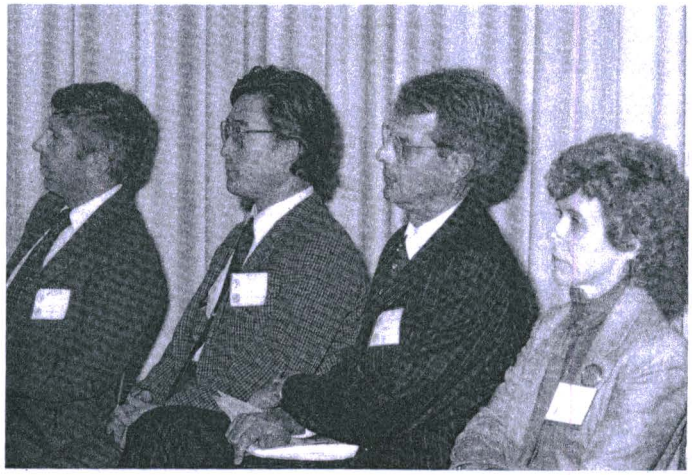
*"In 1984-85, WHO's advocacy will focus on alcohol and driving, drinking during pregnancy, and alcohol abuse among youth..."*

Information transfer, an important aspect of WHO's work, also will be brought to bear on problems of alcohol abuse and alcoholism in countries around the world, he added.

International concern became fully apparent in 1982, reported Robert Trachtenberg, Acting ADAMHA Administrator, when the World Health Assembly—for the first time in its 35-year history—devoted its Technical Discussions to alcohol consumption and alcohol-related problems, and the need for national policies and programs.

Trachtenberg pointed out that Dr. William Mayer, former Administrator, was chief U.S. delegate to the 1982 World Health Assembly discussions, and helped develop a WHA resolution the following year which recommended that nations set public policies on alcohol-related problems and that WHO members devote more resources to them.

Dr. Edward Brandt Jr., Assistant Secretary for Health, reported that HHS feels optimistic that the Nation can achieve several of the priority goals in the alcohol abuse area set for 1990 in "Promoting Health/Preventing Disease: Objectives for the Nation" issued by the Department in 1980. These include: lowering cirrhosis mortality from 12.8 to 12 deaths per 100,000 population; reducing the incidence of fetal alcohol syndrome by 45 percent; and reducing alcohol-related traffic fatalities from 11 to 9.5 per 100,000.



*From left: Dr. Charles Kaelber (NIAAA), Dr. Hiromasa Ishii, Dr. Richard Veech (NIAAA), and Dr. Ernestine Vanderveen (NIAAA)*

Dr. Robert Niven, NIAAA Director, referred to the growing level of concern for alcohol-related problems worldwide, and pointed out that the Institute has long supported WHO objectives and contributed in an advisory and technical capacity to WHO and its regional offices.

As a WHO collaborating center, he noted, NIAAA will collect and exchange scientific information, publish monographs, and hold seminars. Collaborative research projects will include a clinical and epidemiological research project involving Mexico, Scotland, Zambia, and the United States. Another study will test methods of early intervention with high-risk groups.

In addition, NIAAA will help WHO develop a 3-volume report on community responses to alcohol problems, Niven said. "We also have an obligation to disseminate scientific knowledge to practitioners in every part of the world," he added.

Dr. Ramon Alvarez Guitterez, Assistant Director of the Pan American Health Organization, hosted the designation ceremony. Other speakers included Dr. David Hamburg, President, Carnegie Corporation of New York, and directors of three other WHO collaborating centers: Dr. John Macdonald, Addiction Research Foundation, Ontario; Dr. Juan de la Fuente, Mexican Institute of Psychiatry; and Dr. Jose Szapocznik, Spanish Family Guidance Center, University of Miami School of Medicine.

An Alcohol Research Seminar chaired by Niven completed the designation ceremony. Speakers included Dr. Ting-Kai Li, Indiana School of Medicine, who spoke on "Genetic Variability in Response to Ethanol in Humans and Experimental Animals"; Dr. Floyd Bloom, The Salk Institute, "Cellular Actions of Ethanol"; Dr. Roger Meyer, University of Connecticut Medical School, "New Directions in Assessment of the Alcoholic Patient"; and Dr. Richard Jessor, University of Colorado, "Adolescent Problem-Drinking: Psychological Aspects and Developmental Outcomes."

# DETECTING ALCOHOLISM by Dr. Norman Chang

A workshop on early identification of alcohol abuse held in conjunction with the International Alcohol Research Seminar reviewed what is known about early detection and assessed the instruments currently available to gauge a person's alcohol consumption.

In all, 30 papers covering a wide range of topics were presented by U.S. and international scientists at the 2-day meeting.

Because alcoholism and alcohol-related illnesses often develop slowly and silently, new means for early identification must be developed and made available to practitioners to improve intervention, according to Dr. Lois Chatham, Director, NIAAA Division of Extramural Research, who opened the workshop.

The seminar focused primarily on current studies of biological and clinical indicators of alcohol consumption, such as blood chemistry profiles and liver function tests.

Among biological markers, gamma glutamyl transpeptidase (GGT) was referred to most frequently. Its significance as an indicator of alcoholism was explained by Dr. Hiromasa Ishii of Keio University School of Medicine in Tokyo.

GGT is an enzyme which appears at high levels in alcoholics. However, Ishii noted, elevated levels of GGT have been widely used to diagnose liver diseases and also can be observed in patients taking certain drugs. Thus, to ensure accurate diagnoses, GGT should be employed in conjunction with other markers, he pointed out.

Recent research on the enzyme aspartate amino transferase (AST), also known as glutamic oxaloacetic transaminase, suggests that it may be a marker of high sensitivity and specificity. Dr. Bertrand Nalpas of Hopital Laennec in Paris presented data that show a striking elevation of serum mitochondrial AST (mAST) activity in alcoholic patients not found in healthy subjects. When his results are expressed as the ratio of mitochondrial AST over total AST (mAST/tAST), a four-fold increase was observed in mAST/tAST ratios in alcoholics compared to mAST/tAST ratios in controls. Moreover, these results are independent of liver disease, which is further evidence that mAST may play an important role in the production of chronic alcohol consumption. Three NIAAA researchers presented data on a reliable tool they have developed to identify alcohol abusers. Drs. Ralph Ryback, Michael Eckardt, and Robert Rawlings reported being able to identify correctly 96 percent of nonalcoholic outpatients and 74 percent of ambulatory alcoholic inpatients by analyzing the interrelationship among 25 blood chemistry parameters routinely requested in clinical laboratories.

> *Several participants described research on more novel indicators of alcohol abuse that are just now being considered as possible markers.*

Several participants described research on more novel indicators of alcohol abuse that are just now being considered as possible markers. These indicators—which include the formation of a complex between acetaldehyde and hemoglobin, and event-related brain potentials in subjects at risk for alcoholism—show promise of developing better instruments for detecting alcohol abuse.

One such example may have surfaced in a Canadian study of alcohol's impact on the structure and function of biomembranes.

In general, membranes expand and become more "fluid" when exposed to alcohol. However, upon repeated contact with alcohol, they become more rigid: in other words, membranes develop a tolerance to alcohol. Dr. Juan Carlos Negrete of Montreal General Hospital has tried to exploit this phenomenon by measuring red blood cell membrane resistance as a function of alcohol exposure. His preliminary data indicate that this method compares favorably with some of the markers more commonly used for detecting alcohol consumption.

The search for markers has led a number of scientists to focus on the way alcohol is metabolized to acetaldehyde, and then combined with hemoglobin in red blood cells and neurotransmitters in the brain.

Dr. Charles Peterson of Rockefeller University and Dr. Henry Hoberman of Albert Einstein College of Medicine have conducted parallel but independent studies on the interaction between acetaldehyde and hemoglobin. Both have uncovered evidence that an alcohol-dependent product which can be formed between acetaldehyde and a minor component of hemoglobin may be used as an indicator for alcohol abuse.

At the same time, Dr. Michael Collins of Loyola Stritch School of Medicine in Illinois and Dr. Robert Myers of the University of North Carolina at Chapel Hill discussed the significance of a group of compounds called tetrahydroisoquinolines (TIQs), which are found at elevated levels in alcoholic patients. Working independently on the biochemistry and neuropharmacology of TIQs, both investigators uncovered evidence that the compounds may play a role in addictive drinking behavior.

While these types of studies cannot at present be used to design tools for detecting alcohol abuse, they represent potentially important approaches to the problem because they show how a metabolite of alcohol itself can become part of the marker.

Dr. David Rutstein of Harvard Medical School, in collaboration with Dr. Richard Veech of NIAAA, discovered another potential marker, 2, 3-butanediol. A significant level of this unusual metabolite has been found in the blood of severely alcoholic men immediately after drinking.

Dr. Yedy Israel of the Addiction Research Foundation in Toronto presented another promising approach. He and his colleagues have developed an innovative "dipstick" methodology than can quickly measure alcohol concentration in serum, urine, and other body fluids. Its simplicity would be especially valuable for emergency ward and alcohol treatment programs.

Dr. Jonathan Chick of the Royal Edinburgh Hospital, Scotland, reported preliminary results of an intervention-followup study in which problem drinkers identified through early detection methods were subject to a single counseling session. The study demonstrated that even such brief intervention can bring about an increase in rate of remissions among early problem drinkers, and thus be effective in reducing drinking problems.

# LASKER AWARD by Kate Callen

Dr. Eric Kandel, a 16-year NIMH grantee who is Professor of Physiology and Psychiatry at Columbia University's College of Physicians and Surgeons, has received a 1983 Albert Lasker Medical Research Award for his pioneering work on the neurobiology of mental processes.

In 1962, Kandel began his research to uncover the neural bases of learning. He chose to study the marine snail Aplysia because of its relatively uncomplicated nervous system and identifiable neurons. After conditioning the snail to respond with anxiety to certain stimuli, he then examined its neural circuits to track the structural sequences underlying the learning.

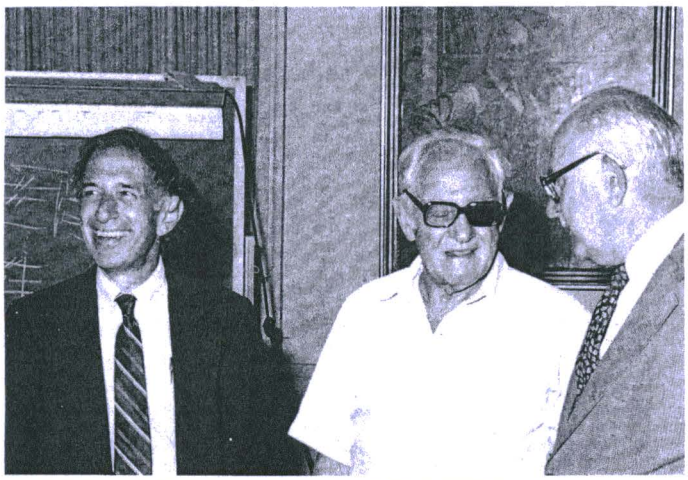
The existence of actual structural changes in the snail's nervous system led Kandel to theorize that:

- learning produced by psychotherapy also may produce structural changes in the brain, and may signify "the power of experience to modify brain function."
- behaviors related to anxiety may be genetically regulated to enhance species survival.

According to Dr. Leonard Lash of NIMH, who has monitored many of Kandel's grants, "his work is extremely important because it shows how a 'model system' can help explain critical brain-behavior relationship."

Kandel's association with NIMH dates back to 1957, when he joined the Intramural Research Program as an associate in the Laboratory of Neurophysiology. He received his first NIMH grant, a Research Scientist Development Award, in 1967 while teaching at the New York University School of Medicine (his alma mater). The grant and subsequent funding from the Institute helped support the Aplysia research that netted him the Lasker award. He currently holds an NIMH Research Scientist Award.

> *His work is extremely important because it shows how a 'model system' can help explain critical brain-behavior relationships.*



*From left: Dr. Eric Kandel, Dr. Julius Axelrod, NIMH, and Dr. Louis Wienckowski, NIMH.*

After joining Columbia's faculty in 1974—the same year he was elected to the National Academy of Sciences—the joint psychiatry/physiology professor was named Director of the school's Division of Neurobiology and Behavior, an interdepartmental unit which has pioneered studies linking mind/behavior and body. Kandel's work there has earned him (among numerous other honors) both the Hofheimer Prize for Research, a top award from the American Psychiatric Association, and the Lashley Award, a top honor from the American Physiological Association.

# POTKIN IN CH

"The bottom line is that we did first-class mental health research in China and the studies are continuing," said NIMH's Dr. Steven Potkin during a recent interview.

Back from a 20-month stay in China, where he set up two research laboratories and introduced up-to-date biochemical techniques, Potkin has assumed duties as Acting Assistant Chief, NIMH Center for Studies of Schizophrenia, and Acting Scientific Director, ADAMHA Office of International Affairs.

Reflecting on his experience as the first U.S. medical researcher to work for an extended period of time in China, he expressed satisfaction that modern research protocols have been established in the Beijing (Peking) and Shanghai mental health institutions where he collaborated with Chinese doctors.

Potkin's visit was sponsored under a bilateral health agreement between the United States and the People's Republic of China. He spent the first 15 months working at the Institute of Mental Health, Beijing Medical College, and the last 5 months at the Shanghai Psychiatric Hospital.

"Doing research in China has major advantages," said Potkin. "Followup studies are relatively easy to do because people rarely move from place to place. And the huge population offers ample numbers of subjects for a variety of studies."

But there also are disadvantages, he pointed out. Knowledge of sophisticated laboratory techniques is not widespread, and the working and living conditions are difficult, particularly in the winter. "Public buildings are not heated, even though temperatures drop below freezing. The cement hospital floors are regularly sprinkled with water to keep dust down, and your body heat seems to seep right through your feet. No matter how warmly I dressed, I always felt cold."

Language was not a problem, said Potkin. A 2-month intensive language course he

NA by Marilyn Sargent

*"The bottom line is that we did first-class mental health research in China, and the research is continuing."*

*Potkin demonstrates a blood sample collection to psychiatrist Zhou Dong-Feng (center) and technician Ziao Sun at Beijing Institute of Mental Health*
*Potkin (center), technician Ziou Li, and Zhou assure complete collection of blood platelets*

took before he went to China gave him enough conversational ability to grasp important aspects that were omitted by interpreters who helped with the 2- to 3-hour patient interviews. However, he soon realized that certain words do not translate.

"For instance, 'guilt' means 'guilty of a crime' to the Chinese, so if you ask, 'Do you feel guilty?', they say, 'No,' but if you ask, 'Is there something you are sorry you did?' they say, 'Sure.' "

Potkin established a number of studies on schizophrenia, the most prevalent mental disorder in China. "More than 95 percent of Chinese patients with a serious mental disorder receive this diagnosis," he explained.

In one of his studies in Beijing, rediagnoses of more than 80 patients who were ill for less than 5 months indicated that most fit the DSM-III criteria for acute schizophrenia. "A few might be diagnosed manic/depressive in the States, but it was difficult to make differential diagnoses, because agitated patients had been treated with thorazine and sleep therapy before I saw them."

The American psychiatrist also compared three treatment modalities for acute schizophrenia: low and high dosages of haloperidol, a neuroleptic, and a combination of haloperidol and insulin coma treatment. "In Beijing on any given day, 10 percent of all mental inpatients receive insulin coma treatment. The Chinese believe it is especially useful for younger patients whom they characterize as 'emotional.' "

Potkin is eagerly awaiting the findings of this comparative study, due next month, because they will comprise the first methodologically sound scientific evaluation of insulin coma therapy ever done. This treatment has not been assessed before, Potkin explained, because it fell from favor in the United States with the introduction of the neuroleptic drugs, which are considered safer. Nevertheless, "we may find a subsample of schizophrenic patients who respond better to insulin coma than to neuroleptics," he said.

In conjunction with studies being done at NIMH, Potkin was able to confirm past anecdotal observations that Asians require lower dosages of neuroleptics than do Caucasians. "We found a 52-percent higher level of medication in the blood of Chinese patients compared to blood levels in American patients matched for body weight and sex. That's a dramatic difference and has major implications for treating Asian patients, particularly in terms of side effects."

In addition, Potkin and his Chinese colleagues measured biochemical markers for schizophrenia and studied the biochemistry of attention deficit disorder (hyperactivity) in children, which has become a major problem in China. With the new national emphasis on one-child families, said Potkin, parents and teachers tend to be overconcerned about the functioning of their children, and many normally active youngsters are inappropriately referred to mental health centers. To deal with this situation, the Chinese need accurate diagnostic tools, he noted.

In Shanghai, Potkin had the opportunity to do CAT scans on untreated patients who had suffered their first schizophrenic episode. This research helped clarify questions raised by U.S. studies which found enlarged brain ventricles and evidence of cortical atrophy in substantial numbers of schizophrenic patients.

Because most U.S. subjects had been previously treated with neuroleptics, it was not clear whether the atrophy is an important factor in causing the schizophrenia or whether it is a result of being schizophrenic or being treated for schizophrenia. However, when compared with Chinese controls, 40 percent of the Chinese patients had enlarged ventricles. This suggests that whatever happens in the brain happens *before* treatment, he pointed out.

Potkin and his Chinese colleagues also collected spinal fluid from schizophrenic patients and controls to study the differences in biogenic amines and opiates.

Another study Potkin began in Shanghai focused on Chinese patients diagnosed as "neurasthenic," a condition manifested by such symptoms as sleep problems, inability to concentrate, lethargy, and nervousness. The diagnosis was developed in the United States at the height of the Industrial Revolution in the late 1800s, but has fallen from use. Today, individuals exhibiting such symptoms are more often diagnosed as having a form of depression or anxiety.

Three groups of Chinese neurasthenic patients were compared to see if they fit DSM-III diagnostic categories. One group was referred from the Shanghai Psychiatric Hospital, another from the Fudan University Clinic, and the third from the Qi Gong Clinic, which uses traditional exercises such as Tai Qi Chuan as the treatment mode.

"Although the patients from the hospital were sicker, there were similarities among the three groups. However, each group of patients tended to focus on complaints specific to their primary concerns. For example, student and faculty patients from the University complained most about problems of concentration, while the Qi Gong Clinic referrals, mostly working people, were concerned about sleep problems.

"In all three groups, sexual and mood dysfunction were not mentioned—not because they do not exist, but because they generally are not regarded by the Chinese as appropriate topics for discussion."

While a number of the neurasthenic patients could be classified as anxious or depressed by DSM-III standards, many others would have to be diagnosed as having an atypical form of one of these disorders.

Concluded Potkin, "In China, neurasthenia is a good diagnosis to have. It implies that you are fatigued from working too hard and allowances must be made. Your social standing on the job is not threatened. If patients are reclassified as having other diagnoses, social consequences might accrue, particularly if better treatments cannot be offered."

Potkin described his China visit as fascinating and satisfying. "I believe our work has been useful for both countries. We brought the best technology available to China, and we will have access to long-term findings almost impossible to get in the United States."

He attributes much of the project's success to the direct assistance and support of NIMH Director Herbert Pardes, who helped resolve many issues. "His involvement was an important factor in the rapid facilitation of scientific exchange between the two countries," said Potkin.

by Merle Kahn

# ON PATIENT POPULATIONS Q&A

Recent shifts in the composition of the mentally ill population—notably, decreasing numbers of institutionalized patients and increasing numbers of chronically ill young adults—have posed new and difficult challenges for the mental health service delivery system.

Dr. Ronald Manderscheid of the NIMH Division of Biometry and Epidemiology, who tracks the mentally ill population, clarified key issues affecting this group in a recent interview with *ADAMHA News*.

**Q:** Exactly how has the population in State and county mental hospitals changed?

**A:** One well-documented change has to do with the age of patients. Our data on State and county mental hospitals indicate that the number of patients between age 18 and 44 is increasing at a time when patients in other age groups are dwindling in number. Between 1969 and 1979, 18- to 44-year-old patients in State and county hospitals increased from 27 to 39 percent of the total, and actual admissions for this age group increased from 55 to 65 percent.

**Q:** How do you account for this change?

**A:** The people born between 1946 and 1964, the "baby boom" generation, now make up the present young adult population. As these large numbers move through life, they cause a shift in the demand for various types of services—and they are now reaching the typical age for onset of mental disease.

**Q:** How much do alcohol and drug abuse contribute to their increased rates of hospitalization?

**A:** Our figures indicate that the relative proportion of patients in State and county mental hospitals with drug abuse and, in particular, alcohol abuse diagnoses has been going up. While the overall number of patients decreased between 1970 and 1980, the number with diagnoses of alcohol and drug disorders increased. In 1979, for instance, 27 percent of admissions to State and county mental hospitals had a primary diagnosis of alcohol or drug disorder, compared with 24 percent in 1969. Most of the increase was in the 18-44 age group, which suggests a correlation between age and these disabilities.

**Q:** What about the psychiatric problems of young alcohol- and drug-dependent patients?

**A:** In terms of diagnostic classifications, I don't think the psychiatric problems of this group are any different from those of other populations. However, data collected for the Community Support Program (CSP) show that a subsegment of this population is likely to experience a co-occurrence of psychiatric problems with secondary alcohol and drug problems.

*Dr. Ronald Manderschield*

But we must remember that many chronically mentally ill young adults have never taken a drug nor had a drink in their lives. If we focus only on alcohol and drug abusers, and on burnouts from those two decades, we do a disservice to other mentally ill people in the 18-44 age group.

**Q:** Does your Division work with the CSP Program to assist States in serving the chronically mentally ill?

**A:** Yes. In fact, we are responsible for evaluating the program.

When we did our first client survey in 1980, CSP was serving nearly 4,000 individuals in 17 states. At that time, our data indicated that the use of inpatient (24-hour hospitalization) services dropped by about 50 percent for people in the CSP program.

This year, based on preparatory work for a survey we are about to launch, we estimate that the program currently serves more than 90,000 individuals in about 39 States, and we project that 48 States will be participating in the program. These and other findings from our surveys are strong evidence that the CSP is an important factor in upgrading the country's mental health service delivery systems.

**Q:** Hasn't there been a long-term trend in the reduction of inpatient care?

**A:** Yes, particularly between 1955 and 1980. The number of resident patients in State and county mental hospitals reached a peak in 1955, with 559,000 patients. In 1980, the figure was down to 132,000.

**Q:** What accounts for this dramatic reduction?

**A:** Starting in 1955, deinstitutionalization took hold, based on the rationale that community treatment is preferable to hospitalization. The deinstitutionalization process was taking place at the same time that community mental health centers (CMHCs) were being developed. In addition, since 1940, general hospitals have been adding psychiatric units for both inpatients and outpatients. In 1980, there were 1,000 of these units, compared with only 40 in 1940.

As the use of general hospitals and CMHCs increased, populations in State hospitals receded. For example, in 1955, 77 percent of all episodes across the entire mental health system were inpatient, compared with less then 28 percent in the 1970s. Conversely, in 1955, there were 400,000 outpatient episodes, whereas by the end of the 1970s, there were 4.6 million—almost 12 times more.

While both inpatient and outpatient care have been growing in community settings, there has been a major shift in the composition of the service system.

**Q:** Any other changes?

**A:** Yes, day-treatment programs have tripled in numbers of patients served between 1969 and 1979, and their use is still growing. In the future, we are likely to see more day-treatment programs and group homes for the chronically mentally ill.

**Q:** How many chronically mentally ill persons are there in the United States?

**A:** According to estimates we developed in 1978 for the National Plan for the Chronically Mentally Ill, there are between 1.7 and 3 million chronically mentally ill adults in this country. The range of figures depends on how "chronically mentally ill" is defined, taking into account "level of disability," "diagnosis," and "duration of disability." More recent research indicates that about 1.1 million chronically mentally ill adults reside in U.S. households.

**Q:** What is the Federal Government doing to promote research on service systems for the chronically mentally ill?

**A:** A few months ago, our Survey and Systems Research Branch collaborated with the CSP on a grant announcement to the field concerning State service systems research on the chronically mentally ill. A primary purpose is to help States collaborate with universities on conducting service systems research relevant to the chronically mentally ill population that is pertinent to policy formation.

This is working out well. But we also need to understand mental health service systems other than those at the State level, and to consider patient populations in addition to the chronically mentally ill. We need to understand national trends in data, and to improve our knowledge of how local service systems operate. Our responsibility as a research institute compels us to develop technology and projects on service systems research that are useful at national, State, and local levels.

# A SUPERB JUGGLER by Marilyn Sargent

***Coordinating the NIMH Collaborative Treatment of Depression Research Program is like juggling a dozen balls at once,***

and according to Dr. Morris Parloff, NIMH's former resident expert on psychotherapy, Dr. Irene Elkin Waskow does it "superbly."

As coordinator of the multi-site collaborative effort, Waskow has been keeping the various components of this unique study in smooth operating condition during the past 3 years and will continue to do so until 1986, when the project is to be completed.

In a recent interview, Waskow described how, under standardized conditions in three clinical settings, the project is comparing the effectiveness of two forms of outpatient psychotherapy used to treat depression.

The treatment sites—George Washington University (Washington, D.C.), University of Oklahoma, and University of Pittsburgh—provide a heterogeneous patient population which will enable scientists to test the generalizability of their findings, Waskow pointed out.

The therapies being compared are the cognitive/behavioral approach developed by Dr. Aaron Beck and colleagues at the University of Pennsylvania, and the interpersonal psychotherapy method developed by Drs. Gerald Klerman, Myrna Weissman, and colleagues in New Haven and Boston.

Cognitive/behavioral therapy attempts to correct the distorted thinking patterns believed to underlie depression. Interpersonal therapy tries to help patients overcome depression through understanding and improving their social functioning and interpersonal relationships.

The two psychotherapies also are being compared with treatment with a pill-placebo and with an antidepressant medication, imipramine, both administered under controlled clinical conditions. Imipramine, long established as a successful treatment for major depression, will provide the project with a standard reference for treatment efficacy.

Only patients meeting Research Diagnostic Criteria for Major Depressive Disorder and criteria for moderate or severe levels of depressive symptomatology are accepted into the program. Randomly assigned to the four treatment modes, the patients receive 4 months of therapy on an outpatient basis and are followed up at 6, 12, and 18 months. The treatment is provided by the project's 27 therapists (nine at each site, three working in each treatment mode). The initial diagnosis and continuing treatment assessments are done by clinical evaluators "blind" to each patient's assigned treatment regimen.


*Dr. Irene Elkin Waskow*

Because the project's success hinges on standardization of treatment approaches, said Waskow, all participating therapists have undergone intensive training at one of three places: Rush-Presbyterian St. Luke's Medical Center (New York) for pharmacological treatment, Yale University for interpersonal therapy, and the Clark Institute of Psychiatry, Toronto, for cognitive/behavioral therapy.

The already-trained and experienced therapists first completed special training institutes and "supervised experience" activities to become familiar with the project's treatment approaches. Then their competency in carrying out the approaches was evaluated by experts in the various treatment modes based on each therapist's performance in three to five videotaped "practice cases."

The clinical evaluators also were trained in the use of diagnostic and followup tests to assure standardized evaluation approaches.

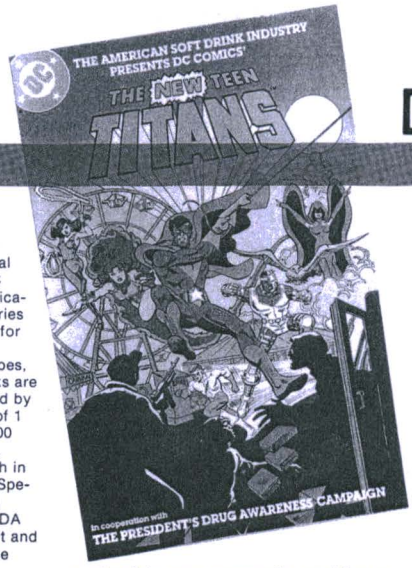
"Never before has psychotherapy research involved such an intense effort to standardize treatment techniques," said Waskow, "but therapeutic consistency is essential if the findings of this project are to be interpreted and replicated."

At the same time that she coordinates the treatment and training components, Waskow maintains contact with the project's eight consultants and supervises the data analysis carried out by Dr. Joseph Collins and colleagues at the Perry Point, Md., V.A. Cooperative Studies Program.

"While it may be extremely complicated, a collaborative research program of this nature offers major advantages," she says. "Large numbers of patients at a variety of locations are being treated under controlled conditions. We will have instant replication of the treatment outcome findings, with enough patients to help us determine which patient characteristics may be related to successful outcome in the different treatment conditions."

Even at this early stage of the research program, Waskow notes that the Institute has gained invaluable information about research methodologies and training issues. "Eventually, we hope to learn which aspects of the three treatments effect which changes in which patients. We will be looking to see if some underlying mechanisms that produce therapeutic change are common across the various treatment forms and if some are unique to each therapy. We want to know which treatment works best for which patient and why."

# 'ZAPPING' DRUG ABUSE




The White House Drug Abuse Policy Office, in collaboration with the National Soft Drink Association (NSDA) and DC Comics, a Division of Warner Communications, has produced the second in a series of drug abuse awareness comic books for elementary school children.

Featuring the drug-fighting superheroes, the "New Teen Titans," the comic books are produced by DC Comics and sponsored by NSDA, which underwrote the printing of 1 million copies to be distributed to 35,000 elementary schools across the country.

At a press conference held last month in Washington, D.C., Dr. Carlton Turner, Special Assistant to the President for Drug Abuse, along with Robert Delauter, NSDA chairman, and Jeanette Kahn, president and publisher of DC Comics, announced the new comic book for sixth graders.

Sixth-grade classes from Congress Heights Elementary School in Washington, D.C., and Lynbrook Elementary School in Springfield, Va., attended the press conference and received the first supply of the drug abuse education comics.

The first in the series of comic books developed for the President's Drug Awareness Campaign was underwritten by the Keebler Company and distributed to 1 million fourth graders last April. In response to requests from around the country, another million copies were printed.

"This is an important boost to drug abuse education and prevention in this country," Turner said. "The soft drink industry reaches into every community, providing an unprecedented opportunity to deglamorize drugs and work toward a drug-free generation of Americans."

He said collaborative efforts such as this are needed to convey facts about drug use to students in their early school years. Referring to the euphemism, "recreational use" of drugs, Turner quoted President Reagan as saying "there is nothing recreational about children whose lives have been lost, whose minds have been ruined. Too often, we've fallen into the trap of using nice, easy, pleasant, liberal language about drugs. Well, language will not sugarcoat overdoses, suicides, and ruined lives."

School principals across the Nation soon will be receiving a package that includes a letter from First Lady Nancy Reagan, comic books containing motivational exercises, certificates signed by Mrs. Reagan for each child who pledges to join the drug awareness program, a teacher's guide, and a poster featuring the "Be a Hero, Stay Drug-Free" New Teen Titan message.

"Since we are not able to include all of the Nation's 51,000 elementary schools, some sixth graders won't see the comic book package right away," Turner said at the press conference announcing the project. "But the readership of New Teen Titans' adventures is such that the comics have a way of circulating very fast." He said he expects many sixth graders will take the book home and their brothers and sister also will read it.

Distribution to schools is a cooperative effort of the Department of Education, U.S. Customs Service, Drug Enforcement Administration, the Federal Bureau of Investigation, and the Office of Juvenile Justice and Delinquency Prevention in the Department of Justice.

The comic book and classroom package is one element in a major White House effort to enlist private sector help in the war against drug abuse. The fourth- and sixth-grade comic books will be followed by a fifth-grade version, which is expected shortly. IBM, the National Federation of Parents for a Drug-Free Youth, and DC Comics are teaming up to provide the fifth-grade version. ∞

# DRIVERS, DRUGS, AND DRINK

Federal and State officials are hopeful that this year's National Drunk and Drugged Driving Awareness Week (December 11-17) was as successful as last year's observance, which contributed to the safest Christmas-New Year holiday in 33 years.

Statistical information on accidents and fatalities during this period is being compiled by the National Highway Traffic Safety Administration (NHTSA), Department of Transportation, and will be released early in the new year.

The public awareness week was timed just before the holiday season when alcohol-related accidents increase due to the large number of parties and social functions.

"The fact is that more people are on the highways, which increases the risk of accidents," said Joan White, NIAAA's Alcohol and Highway Safety Coordinator, who recently was appointed a member of the Executive Board of the National Safety Council's Committee on Alcohol and Other Drugs.

*We've discovered that laws alone won't stop the carnage on our highways. We must change attitudes as well.*

"In addition to its public education value, '3D' week is important because it brings together Federal, State, and local governments as well as the private sector to focus on the problem," she said.

Under NHTSA's leadership, States and communities throughout the country sponsored a variety of activities to promulgate the message that driving, drinking, and drugs do not mix.

With the help of NHTSA, local communities sponsored workshops, task forces, and forums on various aspects of traffic safety. In many States across the Nation, newspapers and radio and television stations programmed special news segments and talk shows during "3D" week.

"Followup activities at the State and community levels are continuing after National Drunk and Drugged Driving Awareness Week," reported White. "In many communities, anti-drunk driving activities will go on until after New Year's."

"We've discovered that laws alone won't stop the carnage on our highways. We must change attitudes as well, not only during this season, but throughout the year." ∞

# PREVENTION

) a noncategorical or generic view of child
ental health—i.e., that children face sim-
ır problems based on common aspects of
eir conditions (e.g., visibility of the dis-
der) rather than on the unique character
their specific diseases.
The Hahnemann center will be looking for
ays to expand the use of the Interpersonal
ognitive Problem-Solving approach, a
idely known prevention technique which
ceived the 1982 Lela Rowland Prevention
ward of the National Mental Health
ssociation.
The ICPS approach was developed by
MH grantees at Hahnemann to teach
ung children how to solve problems on
eir own. Scientists at the new Center will
sign interventions which employ the ICPS
chnique to help other high-risk age
oups (e.g., adolescents and the elderly)
pe with their particular problems.
The Michigan Center will focus on the
ll-documented connection between stress
d all types of work transitions. In addition
unemployment and retirement, these
clude a change in jobs, entering the
rkforce upon graduation from school,
d even promotions.
Drawing on strong ties with management
d labor, Center scientists will conduct
ng-term field studies on interventions,
h special attention to black or older
rkers and those displaced by technologi-
advances or fluctuating labor markets.
The new NIAAA Center represents a
nificant shift away from traditional alco-
research: instead of studying strategies
change the habits of individual drinkers,
entists will look at broad social measures
t can have an immediate impact on
king environments.
ive separate research components will
mine:

how intervention programs aimed at
ohol servers on military bases and col-
e campuses can mitigate alcohol
blems.
. whether "economic fluctuations" affect
ohol consumption and, in turn, drunk-
ing accidents—e.g., Do such crashes
rease after a rise in minimum drinking
s? Do crashes increase during periods
igh unemployment or economic reces-
n because such events provoke higher
ohol consumption?
. whether and how high school alcohol
cies can influence students' drinking.
. whether cultural profiles of high-risk
ilies can indicate ways to prevent family
oholism.
. how actual drinking practices are por-
ed in the media, with special focus on
ne-time television, college newspapers,
public affairs programs.

# NIMH RESEARCH TRAINING

The National Institute of Mental Health has announced availability of two new types of grants designed to attract and prepare additional researchers to work on difficult mental health problems.

The new grants are the "Physician Scientist Award" and the "Clinical Investigator Award."

The first aims at encouraging physicians recently out of medical school to develop either basic or clinical mental health research skills under the guidance of an experienced investigator, leading to their becoming independent mental health researchers.

The second focuses on providing clinical mental health research training to practicing physicians, clinical psychologists, social workers, and nurses, to prepare them for research careers in mental health, particularly related to four priority target areas: schizophrenia and major affective disorders; childhood and adolescent psychopathology; clinical epidemiology and clinical services research; and mental health disorders resulting from sexual assault or emergencies such as natural or manmade disasters.

"These new award programs increase the range of opportunities for mental health research training to help meet the growing demand for an expanded pool of both basic and clinical investigators," said Dr. Ellen Stover, Chief, NIMH Research Resources Branch.

"The rapid progress to date in mental health clinical research has pointed up the need to increase participation by physicians as research scientists. Newly trained M.D.s will be provided the requisite grounding in mental health research principles, and given the research experience necessary to understand and utilize emerging technologies.

"At the same time, the new Clinical Investigator Award program was prompted by an urgent need for more trained scientists to focus on especially difficult mental health problem areas," she said.

Recipients of Clinical Investigator Awards must have doctoral degrees in their fields and at least 2 years of postdoctoral clinical training or experience.

Both awards will be made to public or private research institutions on behalf of specific candidates. Women and minority candidates are particularly encouraged. The "Clinical Investigator Award" is for a maximum period of 3 years. The "Physician Scientist Award" is for 5 years, divided into two phases: 2-3 years of basic science learning experience, and 2-3 years of intensive research experience under an established and productive mental health investigator.

*"These new award programs increase the range of opportunities for mental health research training."*

Initial deadline for applications for either award is February 15, with the earliest award date July 1. Other 1984 deadlines are July 1 and November 1.

Pre-application consultation from NIMH staff is encouraged. Contact Dr. Louis Wienckowski, NIMH Research Resources Branch, Rm. 10-105, 5600 Fishers Lane, Rockville, MD 20857, (301) 443-4347.

# PRESCOTT HEADS ST.E'S

Assistant Secretary for Health Edward N. Brandt, Jr., has announced the appointment of William G. Prescott, M.D., as Superintendent of Saint Elizabeths Hospital.

Prescott, 47, a psychiatrist and member of the PHS Commissioned Corps, served as Director of the Cuban/Haitian Mental Health Unit of the National Institute of Mental Health since July 1981, heading a program set up to evaluate and treat Cuban entrants and prepare them for resettlement into the United States.

He also was in charge of developing mental health care and programs for Haitian entrants being held at various Immigration and Naturalization Service Processing Centers, and he managed a headquarters unit that arranges for the psychiatric evaluation of Cuban entrants who remain in Federal custody.

Prior to his work with Cuban and Haitian Entrants, Prescott headed the Department of Psychiatry at the USPHS Hospital in San Francisco for 5 years, and earlier served in the USPHS Outpatient Clinic at San Juan, Puerto Rico, first as chief of clinical services and then as clinic director.

In addition to staff assignments at the USPHS Hospital in San Francisco, Prescott served at the Veterans Administration Medical Center there, and at San Francisco General Hospital. He has held several teaching positions, among them posts at the University of San Francisco and San Francisco State University, the USPHS Hospital in San Francisco, and the University of California, San Francisco.

Prescott is a recipient of several PHS awards, among them the Outstanding Service Medal.

A graduate of Portland State University, he earned his M.D. degree at the University of Oregon in 1963, and was a psychiatric resident at The Massachusetts General Hospital of Harvard Medical School.

His wide-ranging experience includes service as ship's medical officer on an icebreaker in the Arctic in 1965, as physician for archeological excavations in Israel at Tel Gezer in 1968, as flight surgeon and member of the National Medical Advisory Board for the Civil Air Patrol, and as diving medical officer for Tektite 2, an undersea research project on saturation diving, Virgin Islands in 1970. He also served as chief medical officer of the Cuban Refugee Programs of the USPHS, Fort Chaffee, Ark., in 1980.

Prescott is a member of several professional organizations, among them an Inter-American mental health group and the Undersea Medical Society.

*Dr. William Prescott*

# STAFF NEWS

## *Glasses for VDT Operators*

Employees who wear bifocal lenses may suffer eye strain and fatigue from working with video display terminals (VDTs). Therefore, ADAMHA will pay for special bifocal prescription glasses for VDT users who require them.

While the viewing distance from operator to VDT screen usually is 20 to 25 inches, the normal viewing distance of a lower bifocal lens is only 14 inches. This viewing gap can be bridged by wearing special bifocal glasses for VDT use, because their lower lenses are ground to focus at 20 to 25 inches and cover one-half to two-thirds of the entire lens.

The agency will provide up to $150 for each VDT operator who has a bifocal prescription that

- is less than a year old (to ensure a recent evaluation), and
- states that it is suitable for VDT use.

Employees must obtain and pay for eye examinations. For convenience, glasses can be ordered and picked up at eight locations throughout the Washington suburbs.

For further information, contact your Administrative Officer.

## *Parklawn Training Center January Program Schedule*

*Supervisory/Management Skills:*
"Motivation and Rewards"
January 17 and 31

*Equal Employment Opportunities:*
"Basic EEO Counseling"
January 10-12

*Office Operations:*
"Mathematics Refresher"
January 24-February 12

For further information,
call 443-6790

## *Holiday Message*

One of the real joys of the holiday season is that it gives us an opportunity to exchange best wishes with colleagues and friends. I would like to thank you all for the diligence, initiative, and dedication you have brought to your work at ADAMHA throughout the past year. In 1984, we will respond together to new challenges and to new achievements, I am sure. May you and your families enjoy the holiday season, and have a happy and fulfilling New Year.

Robert L. Trachtenberg
Acting Administrator

## *CFC Campaign*

ADAMHA reached 90 percent of its Combined Federal Campaign goal of $62,000 in donations for community, national, and international agencies early in December.

"With several more weeks to go, we are hoping to top our goal," said James Lawrence, NIDA Deputy Director and chairman of the 1983 drive. "The Office of the Administrator has already topped its goal, at 127 percent; NIAAA reached 108 percent, and NIDA gave 101 percent of its goal. Our employees have shown they are generous, caring people. Next year we hope to have an even greater percentage of participation."

adamha news
ALCOHOL, DRUG ABUSE, AND MENTAL HEALTH
Vol. IX No.4
March 11, 1983

EPIDEMIOLOGY

## JOINT U.S.-ISRAEL HEALTH POLICY SYMPOSIUM PLANNED

United States and Israeli health officials will hold a Binational Symposium March 21-23 at the National Institutes of Health on "Interrelations of Epidemiology and Health Policy."

The objective of the scientific meeting is to explore the contribution and limitation of epidemiology in the formulation of health policies.

It is the second binational symposium to be held under a U.S.-Israel "Memorandum of Understanding on Health Cooperation." The first was in Israel in 1981 on "Regionalization of Health Services."

Three workshops make up the 1983 Symposium, jointly planned by Centers of Disease Control Director William Foege and Dr. Baruch Modan, Director-General, Israel Ministry of Health.

ADAMHA Administrator William Mayer will co-chair a workshop on "The Role of Epidemiology in Assessment of Need for Services, Program Development, and Resource Allo-

See ISRAEL (P. 2, Col. 3)

## ADAMHA Renews Agreement With National Center for Health Statistics

What proportion of elderly people in nursing homes suffer from specific types of mental disorder, and how are they treated?

What percentage of patients who go to a doctor's office have a recorded primary diagnosis of mental illness?

The answer to the first question may come in a National Nursing Home Survey to be conducted next year by the National Center for Health Statistics. NIMH is working with NCHS to ascertain the feasibility of obtaining clinical mental health assessments on nursing home residents in the NCHS survey.

The answer to the second question—about 4 percent—has been tracked for several years now through NIMH collaboration with the National Ambulatory Medical Care Survey run by NCHS.

On February 17, ADAMHA and NCHS officials renewed and updated a Memorandum of Understanding between the two PHS agencies. The agreement provides a mechanism to carry on the development of collaborative projects and to exchange information in areas of common interest and shared responsibility.

Both agencies are responsible for collecting data—ADAMHA on alcohol and drug abuse and mental disorders, NCHS on national health status and health service use.

Much of the data analyzed and disseminated by the agencies have direct implications for public health policy. Congressional and other decisionmakers need health indicators and other epidemiological information to make enlightened decisions about health care resources and the health care needs of Americans. NCHS produces not only national health statistics on vital events and health charactertistics of the population, but also information on the supply and use of health facilities and manpower, operation of the health services system, health costs and expenditures, and other health matters.

ADAMHA, on the other hand, is concerned with increasing knowledge and promoting effective strategies to deal with health prob-

See DATA (P. 2, Col. 1)

## Parron Named First NIMH Associate Director For Minority Concerns

Delores L. Parron, Ph.D., of the Institute of Medicine (IOM), National Academy of Sciences, has been named NIMH's first Associate Director for Minority Concerns.

The new post was mandated by Congress under Title IV of the 1980 Mental Health Systems Act.

Parron assumes chief responsibility for agency policies and programs aimed at safeguarding the mental health of minority Americans. Among her other duties, she will establish collaboration on minority mental health matters within ADAMHA, throughout HHS, and with other Federal agencies and professional and health organizations.

See PARRON (P. 3, Col. 1)

## Inside...


## TO SUBSCRIBE TO ADAMHA NEWS—

ADAMHA News will be available through paid subscription beginning with the April 29, 1983 issue. Average processing time for subscriptions is 4 to 6 weeks. To receive the first issue on time, send orders promptly. Subscription price for 1 year, 25 issues, is $29.00 domestic, $36.25 foreign. Single-issue price is $2.00 domestic and $2.50 foreign. Checks should be made payable to "Superintendent of Documents."

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

• National Institute on Alcohol Abuse and Alcoholism • National Institute on Drug Abuse • National Institute of Mental Health

## DATA *from page 1*

lems and issues associated with the use and abuse of alcohol and drugs, and with mental health and illness.

Areas of collaboration cited in the agreement include: epidemiology, health services research, statistical training and technical assistance to States, statistical data collection, and dissemination of information regarding alcohol abuse and alcoholism, drug abuse, and mental disorders.

NIAAA and NCHS recently signed an interagency pact to poll alcohol use in the Nation's largest health survey conducted annually by NCHS. The "Alcohol Health Practices" supplemental questionnaire will provide the most extensive information to date on drinking patterns and their impact on health across the United States.

In another collaborative agreement, all three ADAMHA Institutes are participating in the NCHS Hispanic Health and Nutrition Examination Survey to be conducted in the Southwest, New York City, and Miami. The survey questionnaire and interviews will include a section on depression, using questions from the psychiatric Diagnostic Interview Schedule. Specific questions concerning alcohol and drug abuse have been developed by NIDA and NIAAA.

The NCHS National Nursing Home Survey of 20,000 nursing homes across the country will be the largest and most comprehensive ever undertaken to obtain information on the health status and medical care of nursing home residents. As part of a pre-test, NIMH is running a clinical appraisal of residents in 75 of the nursing homes, using indepth interviews.

ADAMHA Co-Chairman of the ADAMHA-NCHS Committee, Dr. Darrel Regier, Director, NIMH Division of Epidemiology and Biometry, told *ADAMHA News* that the collaboration between the two agencies also "allows us to assure that the data collected in ADM facilities is comparable to data collected in medical facilities, in that we use the same definitions of demographic terms, types of facilities, economic indicators, and illness classifications.

"The collaboration also lets us look at the interrelationships between physical disorders and alcohol, drug abuse, and mental health problems," he added.

Dr. Manning Feinleib, NCHS Director, will co-chair quarterly meetings of the ADAMHA-NCHS Committee. Collaborative activities will be reported annually.

*—M.K.L., ADAMHA*

***Clockwise: ADAMHA Administrator William Mayer, Dr. Darrell Regier, NCHS Director Manning Feinleib.***

## ISRAEL *from page 1*

cation" with Dr. Mordechai Shani, Director, Chaim Sheba Medical Center in Israel. Speakers include Dr. Darrel Regier, Director, NIMH Division of Biometry and Epidemiology, who will discuss "Alcohol, Drug, and Mental Disorders," and Drs. Dan Michaeli of Israel and Jacob Brody of the National Institute on Aging, who will speak on disorders of the elderly.

The other two workshops are on "The Role of Epidemiology in Prevention Initiatives" and "The Role of Epidemiology in Regulatory Programs."

Assistant Secretary for Health Edward Brandt will address the closing session on "National Resource Allocation Policy."

The Symposium, to be held in Conference Rooms 8, 9, and 10, Building 31, NIH, is open to interested observers. For further information, contact Regier at (301) 443-3648.

Proceedings of the Symposium will be published in a future issue of *Public Health Reports.*

*—James Helsing, ADAMHA*

## ALCOHOL RESEARCH CENTER DIRECTORS MEET

*For the first time, the eight directors of the National Alcohol Research Centers gave a special presentation on their individual projects before NIAAA's National Advisory Council at its January meeting. They are (left to right): Dr. Kenneth Finger, Univ. of Florida, Gainesville; Dr. Floyd Bloom, The Salk Institute for Biological Studies, Calif.; Dr. Lee Robins, Washington Univ. School of Medicine, St. Louis; Dr. Emanuel Rubin, Hahnemann Medical College, Phila.; Dr. Roger Meyer, Univ. of Connecticut Health Center, Farmington; Dr. Robin Room, Medical Research Institute, San Francisco; Dr. Richard Deitrich, Univ. of Colorado Medical Center, Denver; Dr. Charles Lieber, Mt. Sinai School of Medicine, N.Y.C.*

## PTA Takes Aim at Alcohol/Drug Abuse

The National Parent-Teacher's Association reports a project to relay to children in every State information regarding the consequences of alcohol and drug abuse.

The PTA aims to act as a catalyst in reaching the home, school, and media. A special action kit is to be distributed at the National PTA Convention in June, according to the report. All PTAs will be notified of the project by an August mailing, and the October issue of *PTA Today* will highlight the project. Formation of a national coalition and visits to some 30 States by a PTA coordinator will spark the first 10 months of the project which currently is slated to run through May 1985.

The National PTA also announced its plans to develop a *Resource Directory* on substance abuse which is to include descriptions of successful prevention programs and projects by the 52 PTA Congresses nationwide.


**ADAMHA NEWS**

**Alcohol, Drug Abuse, and Mental Health Administration**
**William Mayer, M.D. Administrator**

**National Institute on Alcohol Abuse and Alcoholism-William Mayer, M.D., Acting Director**
**National Institute on Drug Abuse-William Polin, M.D., Director**
**National Institute on Mental Health-Herbert Pardes, M.D., Director**

Mildred Lehman, Associate Administrator for Communications and Public Affairs — ADAMHA Office of Communications and Public Affairs

Editor, Kate Callen. Photography, Nilo Olin. Institute contracts: NIAAA-Wilbur Pinder, 443-4883; NIDA-Susan Lachter, 443-1124; NIMH-Marilyn Sargent, 443-4536; Saint Elizabeths Hospital-Don Coyle, 574-7034. Published biweekly by the Alcohol, Drug Abuse, and Mental Health Administration, Public Health Services, Department of Health and Human Services, to report on agency-related issues and events.



ALCOHOL, DRUG ABUSE, AND MENTAL HEALTH ADMINISTRATION

***ADAMHA News* invites comments. Phone (301) 443-3783 or write to: OCPA, Room 12C-15, 5600 Fishers Lane, Rockville, Md. 20857.**

## PARRON *from page 1*

As IOM's Associate Director of the Division of Mental Health and Behavioral Medicine since 1978, Parron organized the national conference on "Mental Health Services in Primary Care Settings" and directed a 2-year study on "Health and Behavior: A Research Agenda" supported by ADAMHA and NIH. With Drs. David Hamburg and Glen Elliott, she edited the report, "Health and Behavior: Frontiers of Research in the Biobehavioral Sciences."

A staff member of the 1978 President's Commission on Mental Health, Parron coordinated the Commission's panel on "Special Populations: Minorities, Women, Physically Handicapped." Prior to that, she was Assistant Professor, Department of Psychiatry, Howard University College of Medicine.

Parron is particularly interested in increasing participation by minority investigators in basic and clinical studies, especially through the NIMH Minority Fellowship Programs, Minority Access to Research Careers, and Minority Biomedical Support Programs.

Parron's goal is to promote a "multi-ethnic," multidisciplinary approach—"not just blacks studying blacks and whites studying whites, but cross-disciplinary and cooperative efforts to achieve practical results."

She also is aiming to upgrade available data on minority mental health problems, with a special focus on the costs to society of mental illness among minorities and the impact of socioeconomic conditions on general and mental health.

Parron can be reached at Room 17C-27 Parklawn Building, (301) 443-2847.

**ADAMHA NEWS ORDER FORM**

FALL CONFERENCE PLANNED

# NIAAA Named Lead for Occupational Programming

*Maury Lieberman, Donald Godwin, Dorynne Czechowicz.*

ADAMHA Administrator William Mayer has designated NIAAA as the agency's "lead Institute" for occupational programming.

Donald Godwin, an NIAAA staff member with long experience in developing and evaluating occupational programs, has been named the agency's chief staff person.

NIAAA will coordinate activities of the three Institutes to foster and assist prevention/intervention programs at the worksite for alcohol, drug abuse, and mental health problems.

The number of these programs, commonly called Employee Assistance Programs or simply "EAPs," has increased dramatically in recent years as the workplace has proven a highly effective setting for early identification of problems and treatment referrals.

Along with humanitarian purposes, EAPs have been adopted by thousands of industries and businesses out of self-interest, since the programs lead to reduced absenteeism and fewer accidents on the job, as well as improved employee morale, according to Godwin.

"Problems often can be identified more quickly at the workplace than in other areas of a person's life," said Godwin, "through the adverse impact they have on job performance. Holding onto one's job provides a strong incentive—perhaps the best there is—for convincing a person to accept counseling or referral to treatment for the problem."

In addition, block grants to the States have dramatically changed the funding mechanisms for community mental health, alcohol, and drug abuse programs. As a result, many community mental health centers have sought new ways to market their services.

One main avenue has been to develop collaborative efforts with industry. A number of CMHCs have either initiated or expanded EAPs for private companies and industrial firms. This not only offers a source of revenue for the service program, but benefits workers through improved case-finding and treatment of people with ADM problems.

In a survey last year, 28 percent of CMHCs reported working with EAPs, including local industry and business, State and local governments, non-profit agencies, educational institutions, health maintenance organizations, and consulting firms.

As lead Institute, NIAAA will promote exchange of information among the Institutes concerning occupational activities and facilitate joint Institute projects. Godwin will represent ADAMHA in national and international organizations and with professional and citizens' groups concerned about work-based problems and their solutions. He also will strive to broaden occupational program expertise throughout the agency for policy and program development purposes.

Godwin reported that a conference on occupational programs is being planned for Fall 1983. Possibly International in scope, the conference will present a state-of-the-art review and identify research issues to be addressed related to worksite programs for prevention/intervention.

Dr. Dorynne Czechowicz of NIDA and Maury Lieberman of NIMH have been designated as principal liaison staff to work with Godwin on occupational activities.

*—James Helsing, ADAMHA*

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# Preventing Tee

**"Finally it got so I was cutting off the air completely and not just the blood, but then my lungs would just about burst, and I would let go. After awhile I knew the whole thing was useless and rather despairingly resigned myself to all the many tomorrows looming up ahead of me."**

Just 10 days after 14-year-old Viviene wrote about her attempts to strangle herself (an act she had been practicing for months), she was dead, having committed suicide by hanging. Her death was part of an alarming rise in the suicide rate among young people age 15-25, which has tripled in the last 25 years.

Viviene's writings—letters, diaries, poems—were used to illustrate a method for examining adolescent suicide proposed by Dr. John Mack, Professor of Psychiatry, Harvard Medical School.

Mack spoke at a December meeting in Cambridge, Mass., on "Preventive Aspects of Suicide and Affective Disorders Among Adolescents and Young Adults."

The research planning session was co-sponsored by NIMH's Office of Prevention and Center for Studies of Affective Disorders, Division of Extramural Research Programs. It was hosted by the Harvard Programs in Psychiatric Epidemiology and Health Policy.

*Dr. Gerald Klerman*

The meeting's organizer, Dr. Gerald Klerman, former ADAMHA Administrator and now Professor of Psychiatry, Harvard Medical School, and Director of Psychiatric Research, Massachusetts General Hospital, pointed to the timeliness of the workshop.

"Among young people in the 15- to 25-year age bracket, suicide is now the third leading cause of death, following automobile accidents and homicide," said Klerman. "According to the Surgeon General's Report, the death rate has increased for adolescents while mortality rates for all other Americans have gone down."

Contributing factors, according to Klerman, include the state of the economy, demographic fluctuations, and changing family patterns, but he stated, "I believe the opportunities for preventive intervention are promising."

Dr. Stephen Goldston, NIMH Office of Prevention, noted that prevention must be based on knowledge of affective disorders and suicide in young people, but that to understand pathology, normal development also must be understood.

Mack, a Pultizer Prize winning author, illustrated his system for examining causes of adolescent suicide by using Viviene's words. Through judicious selections from her writings, he showed how her life was affected by each of eight phenomena which must be taken into account to understand suicidal youngsters. These include socio-political forces, biological vulnerability, developmental experiences, and personality structures.

The selections Mack read depicted a sensitive, intelligent girl whose disappointing sexual experiences exacerbated her depression, social isolation, and fragile self-image.

***"A factor which may place adolescents at high risk . . . is loneliness, more often reported by [teens] than by any other age group."***

Viviene's writings are marked by a preoccupation with death; the loss of both grandfathers when she was 5 years old seemed to make a lasting impression. She apparently experienced another keen loss during early adolescence when a male teacher, who had given her emotional support, transferred to another school.

Unlike many troubled youngsters, Viviene did not come from a broken home. Nevertheless, she had gained little sustenance from her family and, in fact, felt burdened by a belief that her parents, particularly her mother, needed emotional support from her.

Social isolation, depression, concern with death, and troubled relationships with parents, expressed so poignantly in Viviene's writings, typify the findings reported also by other workshop participants.

For example, Drs. Robert Hirschfeld and Susan Blumenthal, NIMH, found in their review of the scientific literature that poor self-concept, nonsupportive and stressful home situations, illness in the family, and poor coping techniques are associated with depression and suicide in both adolescents and young adults.

The severity of these problems was seen as greatest among those who actually completed their suicide attempts. As the two psychiatrists explained it, depression, suicide attempts, and suicide completions can be viewed as a continuum involving increasingly negative life experiences and inadequate support systems.

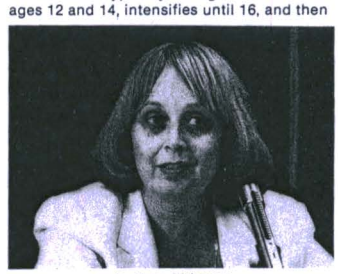
Negative personality and psychosocial characteristics were found to be associated also with alcohol and drug abuse by Dr. Gene Smith, Associate Professor, Harvard Medical School. In a 13-year study of 1,521 youngsters, he found that negative traits, such as dependency, immaturity, inconsiderateness, and impulsiveness were predictive of early and continued use of alcohol, cigarettes, and drugs. Further, he reported, substance abuse correlated highly with depression and suicidal thinking.

Another factor which may place adolescents at high risk for depression and suicide is loneliness, more often reported by adolescents than by any other age group, according to Dr. Tim Brennan, Humans Systems Institute, Boulder, Colo., who has been studying adolescent loneliness under an NIMH grant.

Developmental changes, relinquishing bonds with parents, and a growing need for intimacy are among the factors thought to predispose adolescents to loneliness, said Brennan. Also, their marginal status in American society—as neither child nor adult—can foster a sense of non-belonging.

Low self-esteem is strongly correlated with loneliness and may be a two-way street; loneliness may lower self-esteem and/or low-esteem may result in behaviors that produce loneliness, Brennan reported.

Loneliness typically emerges between ages 12 and 14, intensifies until 16, and then



*Dr. Myrna Weissman*

levels off, he said. Higher levels of loneliness are reported in lower social class youth both at home and in school. Females report more loneliness than males, particularly in the home setting.

Females also report more depression—two to three women for every man, said Dr. Myrna Weissman, Professor of Psychiatry and Epidemiology, Yale University School of Medicine. Noting that depression is strongly

# nage Suicide

related to suicide, she pointed out that many more women than men attempt suicide, although more males succeed because they typically use deadlier methods.

To date, the higher rates of depression in women have not been linked to specific biological causes, Weissman noted. However, evidence that certain forms of depression occur in families suggests a genetic factor.

She discussed a psychosocial theory that may in part explain high levels of depression

> *"Evidence . . . supports the notion that suicide, homicide, and accidents represent a continuum of self-destructiveness."*

in women: the "learned helplessness" theory which maintains that females are socialized to become dependent and helpless, two conditions that predispose them to depression. Poverty, high divorce rates, and single parenthood also place many women at risk for depression, she said.

In a report on suicide among American blacks, Drs. Felton Earls and Ada Jamison, Washington University School of Medicine, St. Louis, Mo., noted that during the past 20 years, black and white suicide rates among young people have equalized in contrast with the first half of the century, when black rates were lower.

Socioeconomic conditions appear to play a more influential role in determining rates of suicide, suicide attempts, and depressive symptoms in blacks than in whites, they said.

"If homicide is included with suicide into a single category of 'violent deaths,' then the loss of expected life in young blacks, especially males, becomes alarmingly high." They said that evidence from case histories supports the notion that suicide, homicide, and accidents represent a continuum of "self-destructiveness," particularly in blacks.

Until more is known about emotional development during adolescence, and until clinicians and developmentalists integrate their findings, efforts to prevent adolescent suicide will not be sufficiently informed, said Drs. Anne Petersen and Edward Craighead, Pennsylvania State University.

*Dr. John Mack*

Petersen and Craighead reported that almost all studies on normal development were done with white males; thus, developmental "norms" may have little application to females or minorities, they pointed out. Also, studies indicate that adolescence is not necessarily a period of emotional turmoil, they said. Empirical evidence shows a gradual increase of moral and ego development during adolescence and young adulthood. Self-esteem usually increases, and "identity begins to stabilize."

However, they noted, contrary to a view based more on wishful thinking than evidence, troubled adolescents do not outgrow their problems but tend to become troubled adults.

Between 10 and 20 percent of the adolescent population experiences enough psychopathology to warrant intervention, they reported. Anxiety and depression (found more in females) and conduct disorders (more in males) are the problems reported most often. Anxiety and depression place individuals at risk for suicide, they report. Eighty percent of suicides are thought to suffer from depression. Three to five times as many females as males attempt suicide, but three to four times as many males succeed.

In terms of prevention, the investigators suggested that:

- Program developers have a thorough knowledge of developmental, epidemiological, and clinical research in order to know the appropriate intervention targets;
- Programs be multifaceted, dealing with social, cognitive, physiological, and emotional domains;
- Prevention be specific to an adolescent's developmental level; and
- Gender differences be taken into account.

Dr. Julius Richmond, former Assistant Secretary for Health and Surgeon General, chaired the closing session on priority areas for future research.

Other program speakers were: Dr. Robert Arnstein, Yale School of Medicine; Dr. Eva Deykin, Hawaii School of Public Health; Dr. Sheppard Kellam, The Johns Hopkins University School of Hygiene and Public Health; Pamela Perun, Harvard Medical School; Dr. Theodore Reich, Washington University School of Medicine, and Dr. Daniel Levinson, Yale University, Department of Psychiatry.

> *"Three to five times as many females attempt suicide, but three to four times as many males succeed."*

*—Marilyn Sargent, NIMH*

## NIMH: 'There Is Life After High School'

Today's adolescents believe that by age 14, they either have made it or not. If not a top student, super athlete, or the most popular kid in school, they think that they will not have the advantages necessary to compete in the future, and they often give up.

That's why so many drink, take drugs, or act in other self-destructive ways, said Jerry, a Prince Georges County, (Md.) high school student at a recent NIMH meeting.

Jerry was among the 25 participants—from schools, the community, and the mental health field—brought together by the NIMH Mental Health Education Branch in response to the alarming rates of violence, suicide, and emotional problems in the teenage population.

The meeting was a first step in developing mental health materials for use in the schools and a training program to enhance communication between school and mental health personnel.

Dissemination of knowledge derived from mental health research is integral to the Institute's role, said Dr. Julius Segal, Director, NIMH Division of Scientific and Public Information. Investigators have found that schools have a major influence on the mental well-being of their students, he continued. Further, adolescence is no longer seen as a stage of life so fraught with physical and social changes that individuals cannot make changes needed for emotional growth.

"Studies indicate that there are opportunities for continual change throughout a lifetime," Segal noted.

With these factors in mind, Dr. Jacquelyn Hall, Chief of the Branch, asked participants

*See TEENS (P. 7, Col. 1)*

NIMH SOLICITS RESEARCH

# Elderly Patients Are Benefiting from Psychotherapy, Scientists Say

Contrary to popular belief, older people are benefiting from psychotherapy, according to preliminary findings by two NIMH grantees presented at a recent conference on psychodynamic approaches with the elderly.

Drs. George Silberschatz and John Curtis of San Francisco's Mt. Zion Hospital reported on their current study of the process and outcome of brief, psychodynamic, dramatic therapy (or "insight-oriented" therapy) with older adults who range in age from 50 to 90 years old.

In the past, said Silberschatz, therapists provided little assistance to the elderly other than superficial therapeutic attention to the institutionalized or demented. Because they were considered too rigid to change or "beyond help," older people were not welcomed as clients.

However, this is changing, according to conference reports. Increasing numbers of geriatricians are using short-term psychodynamic therapy to treat older patients. But, to date, there has been little research on the success of this form of therapy, according to Dr. Nancy Miller of NIMH's Center for Studies of the Mental Health of the Aging.

*Dr. Nancy Miller*

***"Age per se is not . . . a negative factor in therapy; working with older adults can be very productive."***

Such research is needed urgently, said Miller, because psychotropic medication is contraindicated in many of the elderly, which means that their only resource for mental treatment is some form of psychotherapy.

Silberschatz and Curtis announced that they have just started a study comparing various age populations who use insight-oriented therapy. The preliminary results are very encouraging, they said.

According to the scientists, "Preliminary findings indicate that older adults can profit from insight-oriented therapy. They typically are motivated for treatment; they seek and can benefit from insight; and, as a rule, they are neither intellectually nor characterologically too rigid to benefit from treatment."

*Conference participants included Dr. George Pollock, Director, The Institute for Psychoanalysis, Chicago; Dr. Gene Cohen, Director, NIMH Aging Center; and Dr. John Nemiah, Editor-in-Chief,* American Journal of Psychiatry.

Comparing older patients with younger adult patients, the researchers found that older adults "progress in therapy at least as rapidly as do the younger cohorts."

Silberschatz related how a 61-year-old woman came into his care with a wide range of somatic complaints. She had become depressed after her husband's forced retirement due to ill health made her feel profoundly guilty because she continued to enjoy working. Such guilt—termed "survivor guilt"—is a frequent complaint among older individuals whose spouse, friends, and even offspring are disabled or dead.

Within 4 months of therapy, the woman had gained important insights into herself and developed control of her guilt feelings, Silberschatz recalled. At a 1-year followup interview, the woman reported that she had continued working and was enjoying her job relatively free of guilt.

The researchers concluded, "Age per se is not necessarily a negative factor in therapy, and working with older adults can be very productive."

Miller emphasized that the Institute is looking for applications from researchers which focus on process-oriented research and psychodynamic approaches to the treatment of the elderly.

"We will be happy to help researchers apply for funds in these areas, and we encourage scientists to design research protocols with this kind of emphasis," she said.

*—Judy Folkenberg, NIMH*

# Private Sector Coalition in Kansas To Hold April Conference on "Wellness vs. Abuse"

Kansas business and professional leaders concerned about alcohol and drug abuse will join forces this spring for a unique statewide conference on "An American Crisis: Wellness vs. Abuse."

A private-sector coalition of 16 State-level organizations is backing the April 13 and 14 meeting in Salina. Primary sponsors are the Kansas Medical Society and the Kansas Department of Social and Rehabilitation Services, Alcohol/Drug Abuse Services. Other cosponsors are:

Kansas Pharmacists Association
Kansas Medical Society Auxiliary
Kansas Bar Association
Kansas Association of School Health
Mental Health Association in Kansas
Consultation of Cooperating Churches in Kansas
Kansas Association of Broadcasters, Inc.
Kansas Hospital Association
Kansas Department of Education
Kansas Department of Health and Environment
Kansas Department on Aging
Kansas Department of Transportation
Salina Area Chamber of Commerce
Salina Citizens' Coalition

"We see this conference as imperative," said Dr. Kermit Wedel, President of the Kansas Medical Society. "[It] should give a clear message to Kansans that we, as professionals, are taking an active, coordinated and comprehensive approach in dealing with the complex problems of alcohol and other drug abuse."

Dr. Jack Durell, Associate Director, NIDA Office of Science, will deliver the keynote address on "Wellness vs. Abuse." Throughout the conference, 30 elective workshops will examine alcohol/drug abuse interventions based on the family, the school, and the workplace, among other topics. In addition, a special panel of broadcasters and journalists will discuss "The Role of Media in the Prevention of Alcohol and Drug Abuse."

Continuing education credits will be offered.