PSYCHOPHARMACOLOGY NEWSLETTER

(DIVISION 28 - THE AMERICAN PSYCHOLOGICAL ASSOCIATION)

SPRING, 1979

FUNDING FOR RESEARCH AND DEVELOPMENT

The National Science Foundation (NSF) predicts that total spending on research and development in the United States will reach $51.6 billion in 1979, an increase of approximately 9% over 1978. Funding for basic research will reach $6.7 billion (an 11% increase), while applied research funds will reach $11.7 billion (a 10% increase) and development funds will approach $33.2 billion (a 9% increase).

Colleges and universities will remain the largest performers of basic research (52%) and industry will remain the largest performer of applied research (58%) and development (85%). NSF also expects that approximately 610,000 scientists and engineers will be employed on a full-time basis in 1979, a figure that has been increasing each year since 1973 when 518,000 were employed. Traditionally, one-third of all scientists and engineers are engaged in research and development activities.

Research and development is expected to account for 2.2% of this nation's gross national product in 1979, or about the same as in 1978 but substantially below the high of 3% experienced in 1964. Whether these figures represent acceptable levels of funding is questionable. Jerome Weisner, President of MIT, has expressed his concern that the effectiveness of this nation's major research universities could be seriously curtailed by Federal funding problems. He fears that the Federal-academic relationship is foundering after nearly three decades of fruitful partnership. According to Weisner, a failure to maintain adequate Federal funding for research could result in a dulling of the sharp edge of university research.

DIVISION 28's CONVENTION PROGRAM

George Bigelow, Division 28 Program Chair, announces the following. The Division's program for the APA convention in September has been selected, and the content of the program covers a wide range of topics -- reflecting the wide interests and impact of psychopharmacology. Invited addresses have been arranged in the areas of clinical psychopharmacology, neuropharmacology, behavioral toxicology and drug abuse.

- Gerald Klerman, Director of ADAMHA, will speak on "Treatment Assessment and New Research Directions".
- Solomon Snyder, from Johns Hopkins Medical School, will speak on "The Brain's Own Opiates".
- Bernie Weiss, of the University of Rochester Medical Center, will speak on "Food Additives and Hyperkinesis: Current Evidence".
- Vincent Dole, of Rockefeller University, will speak on "The Metabolic Theory of Addiction".
- In addition, C. R. Schuster will deliver a Presidential address on "The Relationship of Psychopathology to Drug Abuse".

A variety of symposia have been arranged on topics including drug effects on repeated acquisition performance, memory consolidation, psychopharmacology and aging, drugs, hormones and aggression, ethanol reinforcement, pharmacological correlates of drug action, cigarette smoking and analysis and treatment of substance abuse.

Papers accepted for presentation will deal with drug self-administration, animal and human behavioral pharmacology, drug discrimination, neuropharmacology and clinical psychopharmacology.

PSYCHOPHARMACOLOGY RESEARCH AT GEORGETOWN UNIVERSITY

Most of the ongoing psychopharmacology research in the Department of Pharmacology at Georgetown University can be divided into four major areas: 1) behavioral pharmacology (Drs. D. M. Thompson and J. M. Moerschbaecher), 2) neurochemistry (Drs. K. J. Kellar and K. N. Gale), 3) behavioral teratology (Dr. J. Nuite), and 4) clinical pharmacology (Dr. W. T. Beaver).

The behavioral pharmacology laboratory is primarily concerned with drug effects on the acquisition of complex operant behavior in primates and pigeons. Through the use of multiple schedules, we have been investigating how a variety of behavioral variables may modulate the effects of drugs on acquisition and performance of response chains in primates. It is a well-documented finding that drugs such as d-amphetamine and cocaine have greater disruptive effects on acquisition than on performance. We are currently attempting to determine whether such differential drug effects are due to differences in stimulus control, in rates of responding or in rates of reinforcement. We are also looking at drug effects on acquisition baselines with and without stimulus-fading procedures. In other studies with some of the same baselines, we are assessing the effects of chronically administered d-amphetamine and cocaine. In research with pigeons, we have just completed a study on the behavioral effects of d-amphetamine and cocaine under conditions where the acquisition baseline was degraded through the use of large fixed-ratio schedules. Under these baseline conditions, we found that certain doses of both drugs produced error-decreasing effects. In preliminary studies, we are comparing the effects of phencyclidine with those of d-amphetamine and cocaine.

In addition to the drug studies involving complex operant behavior, we are interested in the effects of drugs on extinction-induced aggression in pigeons. Most of this research is being conducted by Mitchell Moore, a senior graduate student. The effects of chronic chlordiazepoxide administration as well as acute and chronic cocaine administration have been studied with this procedure. Both drugs selectively decrease aggressive behavior at certain doses. Tolerance developed to the rate-decreasing effect of cocaine on operant behavior but not to its effects on aggression. Comparisons are now being made between benzodiazepines, barbiturates and amphetamines. Another project is concerned with the effects of amphetamine-type drugs on stereotyped behavior in primates and the effects of amphetamine on schedule-controlled behavior.

Dr. Kellar and his co-workers are using in vitro receptor binding techniques to investigate the characteristics of neurotransmitter systems in rat brain following acute or chronic administration of tricyclic antidepressant drugs, electroconvulsive shock (ECS), or lithium. They have found that chronic (but not acute) administration of desipramine results in a 25-30% decrease in the apparent number of beta adrenergic receptors in the cerebral cortex and hippocampus, but not in the striatum. Neither alpha adrenergic or serotonergic receptors in the cortex nor dopaminergic receptors in the striatum are affected by these treatments. Nearly identical selective changes in the beta adrenergic receptors are seen following chronic (but not acute) ECS. Lithium given chronically also reduces the apparent density of beta adrenergic receptors in the brain, again with the same selectivity as the tricyclics and ECS. These results suggest that neurotransmission mediated by beta adrenergic receptors in the brain is important to the pathophysiology of depression and the therapeutic effects of antidepressant interventions.

Dr. Gale is using stereotaxic lesioning and neurochemical techniques to examine interactions between neurons containing GABA, dopamine, substance P and enkephalin in the basal ganglia in animals which have been acutely or chronically treated with drugs such as apomorphine,

amphetamine, cocaine, haloperidol, chlorpromazine, or clozapine. These studies will provide a better understanding of the basic neurotransmitter interactions and circuits which may underly some of the behavioral and neurological changes that take place with long-term administration of these drugs.

Dr. Nuite has been developing a series of procedures to detect the effects of exposure of young organisms to centrally acting drugs, particularly narcotic agonists, and to determine the significance of any effects observed. More specifically, this has involved: a) setting up procedures which enable one to monitor longitudinally the alterations in several indices of viability, maternal-fetal interactions, neuromotor and neurochemical maturation, and responsivity to drugs in rats from the time of birth to adulthood, b) using and documenting the effects of doses and schedules of drug exposure which are analogous to, or can be related to, clinical use of narcotic agonists; an example of this approach has involved the development of a procedure for chronic oral self-administration of methadone and l-alpha-acetylmethadol in female rats to provide a schedule of drug exposure analogous to methadone maintenance, and 3) examining the persistence and/or reversibility of these effects.

Dr. Beaver's research is concerned with the clinical evaluation of analgesics. Patients with post-operative pain, oral-surgery pain, or pain associated with cancer are given coded medications on a double-blind basis. Trained nurse-observers use validated rating scales to record the patient's verbal reports of pain intensity at different points in time following medication. In addition to the time-effect data, the analgesics are compared in terms of their oral/parenteral efficacy, relative potency, and adverse reactions. Drugs with analgesic properties that are currently being evaluated include nefopam, nalbuphine and heroin.

(Donald M. Thompson)

POSITIONS AVAILABLE

Several postdoctoral positions are available in a broad interdisciplinary program of research aimed at the elucidation of the behavioral and biological bases of learning and memory. The studies are focused on the basic behavioral processes involved in classical conditioning of the rabbit's nictitating membrane or jaw movement response. Studies include the examination of drug effects on sensory, motor and associative processes, as well as a determination of the mediation of these effects through various synaptic transmitters. The studies include the anatomical mapping of the conditioned and unconditioned reflex pathways, determination of the synaptic transmitters mediating these reflexes, as well as electrophysiological studies including recording from, and stimulation of, the unconditioned reflex pathway. For details, contact I. Gormezano, Professor of Psychology, or J. A. Harvey, Professor of Psychology and Pharmacology, The University of Iowa, Iowa City, Iowa 52242, or call area code 319/353-4764.

CONVENTION SCHEDULE AND HOTELS

In planning convention travel, Division members should note that APA has scheduled Division 28's 20 hours of program time to be divided equally among the last 4 days of the convention (Sept. 2-5). Notice that this means 5 hours of Division 28 programming on the final convention day. One interdivisionally-cosponsored symposium (Developmental Aspects of Substance Abuse; 1-2 p.m. requested time) plus the Division 28 Executive Committee meeting (4-5 p.m. requested time) are expected to be scheduled for the first day (Sept. 1).

Programs for Division 28, Division 3 (Experimental) and Division 6 (Comparative and Physiological) will be scheduled in the Americana and the Sheraton hotels. Programs for both Division 12 and Division 25 will be in the Hilton and the Sheraton hotels.

COMMEMORATION OF FIRST PSYCHOLOGY LABORATORY

In recognition of the founding of the first psychology laboratory in 1879, and with an appreciation of the significance of this event in the history of psychology, the Council of Representatives of the American Psychological Association has declared the year beginning with the annual convention of the Association in 1979 and extending through the annual convention of the Association in 1980 as a year of commemoration of the founding of early psychology laboratories. In celebration of this event, the Council of Representatives directed that a commemorative medallion appropriate for the occasion be struck to mark the centennial of the founding of scientific psychology. The Council also encourages all members of the Association and all groups affiliated with the Association to take part in the commemoration by conducting or participating in suitable programs and activities throughout the year at the local, regional, or national level.

APA ORGANIZATION

During its preliminary meetings, the new Commission on Organization of APA stated its intention to proceed with careful deliberation and thorough review rather than quickly adopting a specific solution to APA's problems. The aim of the Commission is to make APA more effective in helping all groups in psychology realize their own goals and function more effectively in their own domains. The Commission observed that a number of issues concerning APA's organization are not new, and that its efforts will be critical in determining APA's composition and effectiveness in the future.

Members are encouraged to express their views on the question: "What could APA be doing or doing better for you and your division?". Forward your comments to Stephen Nelson, Staff Liaison, at the APA Central Office.

NEW WOMEN'S REPRESENTATIVE

Charles R. Schuster, Division 28 President, announces the appointment of Chris E. Johanson as the Network Representative for APA's Committee on Women's Programs for our Division. Any member seeking or having information concerning women's rights as it relates to our Division or APA, should contact Chris.

ERA REFERENDUM

A referendum to approve or disapprove of the Council's decision not to hold meetings in states which have not ratified the ERA has been mailed to the membership. Chris Johanson urges all Division members to give this referendum serious thought and to cast a vote. If you would like more information, the following publications are available.

1. ERA: Psychological, Social and Ethical Implications for Psychology
   write to: Nancy F. Russo, Ph.D.
   Women's Programs
   APA
   1200 - 17th Street, N.W.
   Washington, D.C. 20036

2. Statement on the ERA
   write to: Carol A. Bonosaro
   Women's Rights Program Unit
   U. S. Commission on Civil Rights
   Washington, D.C. 20425

3. The Equal Rights Handbook by Riane Tennenhaus Eisler, October, 1978, Avon Books

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EDITORIAL CORRESPONDENCE

Material of interest to the membership of Division 28 should be forwarded for inclusion in the Newsletter to:

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