

Request for Applications in Drug Abuse Research

Novel Approaches to Phenotyping Drug Abuse (RFA-DA-04-005)

Drug abuse and addiction are complex disorders that reflect the interplay between underlying genetic susceptibility and environmental risks. Scientists believe the disorders arise from multiple genes exerting small effects, gene-by-gene interactions, gene-by-environment interactions, and a host of environmental factors and risk behaviors. However, there has been limited success in reliably identifying specific susceptibility genes for drug abuse.

The purpose of this initiative is to investigate the phenomenology of drug abuse, with the goal of identifying heritable manifestations of the disease. To this end, NIDA encourages research efforts from multiple research disciplines to uncover heritable specificities linked with drug abuse.

Examples of research projects include studies that:

- Identify common or universal behavioral manifestations of drug abuse, or detect reliable subtypes of drug abuse;
- Evaluate phenotypes according to key variables, such as age of onset, gender, and psychiatric comorbidity;
- Evaluate phenotypes defined in terms of consequences that are fine-tuned to specific drugs, such as cognitive impairment and “withdrawal behaviors” associated with marijuana use;
- Investigate potential “vulnerability phenotypes,” or preclinical markers, that represent indicators of specific risk for developing drug abuse;
- Examine whether and how drug abuse phenotypes persist or change over time, across different contexts, and over generations.

NIDA intends to commit approximately \$2 million in FY 2004 to fund 5 to 10 new and/or competitive continuation grants in response to this RFA.

For additional information about this request for applications, go to <http://grants1.nih.gov/grants/guide/rfa-files/RFA-DA-04-005.html>.

International Bioethics Education and Career Development (RFA-TW-04-001)

In partnership with other branches of the National Institutes of Health, NIDA invites applications to develop or expand current graduate curricula and training opportunities in bioethics related to performing research involving human subjects in low- and middle-income nations. New applications focusing on countries of the Middle East, North, East, and West Africa, Eastern Europe, and the former Soviet Union are encouraged.

The goal of this initiative is to increase the number of biomedical and behavioral scientists, clinical investigators, nurses, and other health professionals and relevant academicians in developing nations with state-of-the-art knowledge of ethical considerations, concepts, and methods in research involving human subjects.

Specific objectives of this training program include:

- Improving the quality of ethics training by supporting the development of courses in fundamental areas to provide teaching/research skills in bioethics and the ethical review of research on acute and chronic diseases in developing countries;
- Supporting advanced training for professionals in these nations who could assume expert roles and leadership responsibilities in these areas.

Applicants should provide a detailed description of the proposed courses and practicum opportunities currently available or to be developed, along with explicit educational goals of each program component. Applications should propose programs for up to 2 years and no less than 1 year.

Participating Institutes and Centers intend to commit approximately \$1.8 million in fiscal year 2004 to fund seven or eight new and/or competitive continuation awards and planning and curriculum development grants in response to this RFA.

For additional information about this request for applications, go to <http://grants1.nih.gov/grants/guide/rfa-files/RFA-TW-04-001.html>.

Program Announcements

Molecular Genetics of Drug Addiction Vulnerability (PA-03-155)

Although heritability plays a role in an individual's vulnerability to drug addiction, the genetic variants underlying increased susceptibility to this disease are unknown. Identifying and characterizing these heritable differences can lead to improved methods for preventing addiction, diagnosing people at risk for addiction, and treating people already addicted. NIDA currently supports research that will enhance the study of the molecular genetics of addiction vulnerability.

NIDA encourages new applications for research projects that identify chromosomal loci and variations in genes associated with increased vulnerability to addiction. Genetic approaches may include, but are not limited to, linkage, linkage disequilibrium, and association studies. Investigators may include gene-gene interactions, gene-environment interactions, and nonhuman models to study the genetics of addiction vulnerability.

For additional information about this program announcement, go to <http://grants1.nih.gov/grants/guide/pa-files/PA-03-155.html>.

Interactions Between Stem Cells and the Microenvironment In Vivo (PAS-03-172)

The adult mammalian nervous system is restricted in its ability to replace neurons lost through injury, disease, alcohol and drug abuse, or advancing age. However, stem cell research offers tremendous potential for treating many nervous system conditions for which there are no current treatments or cures. The discovery of endogenous human stem cells raises the possibility that, when exposed to the optimal nervous system microenvironment within living systems, such cells will differentiate and integrate into existing circuits.

Much of the progress in stem cell research has come from laboratory investigations. But the behavior of cells in tissue culture does not adequately predict how these same cells will behave when transplanted into a living host. Therefore, the next stage in developing cell restoration therapy requires understanding stem cell-host behaviors.

Recent reports suggest that the local microenvironment governs a stem cell's behavior and subsequent differentiation. Altering this environment by injury, drugs, or other circumstances may affect the ability of these cells to survive and integrate into the surrounding tissue. Understanding these changes will be important in deciding about the use of such replacement therapies in very young or elderly people, those with neurological injuries or conditions, and persons with a history of drug or alcohol abuse.

This program announcement is intended to promote studies that establish and identify the nature and action of environmental cues in the nervous system that regulate stem cells' fate. NIDA is joining other NIH Institutes in supporting this research area. NIDA is interested in how drugs of abuse and factors such as stress and environment

affect stem cell behavior and its functional consequences, which might be related to the cognitive impairments, developmental deficits, neuroadaptation, and addictive behaviors seen in drug abuse. Areas of high interest include:

- Characterizing cell signaling pathways and components (inside and outside the cell) involved in relaying the action of local cues on these cells;
- Investigating the links between biochemical or biomolecular changes arising from injury, disease, or exposure to alcohol, drugs of treatment or abuse, and any resulting alterations of stem cell activity.

Participating Institutes and Centers have set aside a total of \$2 million per year to support this initiative.

For additional information about this program announcement, go to <http://grants1.nih.gov/grants/guide/pa-files/PAS-03-172.html>.

SBIR/STTR Phase II Competing Continuation Awards (PA-03-154)

NIDA Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards have spurred promising drug abuse-related products and programs. The goals of NIDA's SBIR/STTR programs focus on bridging the gap between performance of basic science and commercialization of resulting innovations.

Under these programs, NIDA now seeks grant applications to support advanced-stage development of agents to treat drug and nicotine abuse and dependence.

Awards funded under this program announcement would add up to another 3 years of support to small businesses for drug development by providing a second stage of Phase II SBIR/STTR funding. Total funding per project should not be expected to exceed \$1 million per year.

Examples of appropriate topics for proposed SBIR/STTR Phase II competing continuation projects include:

- Preclinical studies beyond those conducted under the initial Phase I and Phase II grants;
- Completion of studies as required by the Food and Drug Administration for an Investigational New Drug application;
- Human laboratory clinical trials to determine a medication's safety profile and interaction with drugs of abuse;
- Clinical studies to determine the medication's efficacy.

For additional information about this program announcement, go to <http://grants1.nih.gov/grants/guide/pa-files/PA-03-154.html>.

For more information, including facts about eligibility requirements for a small business concern and participation in the SBIR/STTR programs, go to <http://grants.nih.gov/grants/funding/sbirsttr1/index.doc>. For a brief description of what constitutes a small business concern, go to <http://grants1.nih.gov/grants/guide/notice-files/NOT-OD-03-053.html>.

Basic and Translational Research in Emotion (PA-03-169)

NIDA is one of several branches of the National Institutes of Health encouraging applications for research projects involving the study of emotion. The study of emotion includes investigations of overt behaviors (such as aggression or withdrawal), interpersonal relationships, communication and decisionmaking, and the environmental circumstances and experiences that shape and elicit emotions. Emotion research also includes the study of psychoactive substances that alter mood states. Conversely, research in this area also may address how mood can make individuals more vulnerable to using drugs, as well as how mood can modulate the physiological effects of drugs.

Examples of relevant issues that may be considered include:

- Investigation of the continuities and discontinuities between normative emotional processes and those seen underlying the decisions to use drugs of abuse;
- The extent to which behavioral, physiological, and neural measures of emotion identify people at risk for drug abuse (within the context of preventive interventions);
- Identifying the mechanisms by which stimuli associated with drug abuse become triggers of emotional and subjective states that lead to relapse.

Research also suggests that individual differences in emotional responses may mark specific vulnerabilities underlying the development of mental disorders and/or drug dependence. Sample research projects in this area may include identifying the biological, developmental, social, personality, and cognitive factors that interact with emotion-based individual differences contributing to drug use.

For additional information about this program announcement, go to <http://grants1.nih.gov/grants/guide/pa-files/PA-03-169.html>.

New Research Spurs Second Printing of NIDA Prevention Guide

The National Institute on Drug Abuse, National Institutes of Health, has released its newly updated publication, *Preventing Drug Use among Children and Adolescents: A Research-Based Guide for Parents, Educators, and Community Leaders, Second Edition*. The 46-page booklet—significantly larger than the first edition—aims to help prevent young people from using drugs.

The second edition reflects NIDA's expanded research program and knowledge base. Presented in a question-and-answer format, the new Guide is organized around 16 fundamental prevention principles derived from research on effective prevention programs.

NIDA Goes BACK to School

NIDA is launching a virtual back-to-school program with a Web site designed especially for teens and is sending teachers information about science-based educational materials.

The new Web site, www.teens.drugabuse.gov, is geared specifically for adolescents ages 11 to 15. It contains age-appropriate facts on drugs, real stories about teens and drug abuse, games, take-home activities, and a Q&A forum with NIDA Director Dr. Nora D. Volkow, as "Dr. NIDA."

Information about the new Web site is included in material sent to some 40,000 middle- and high-school science teachers. The mailing contains a letter from Dr. Volkow, an art card promoting the new Web site, a flyer promoting the Institute's Spanish-language publications, and a flyer detailing NIDA's grade-specific education material.

"NIDA is back to school to stay," says Dr. Volkow. "Science education—especially in the field of drug abuse and addiction—is dynamic. We want to convey that excitement, while keeping students and their parents, teachers, and school counselors informed of the latest findings our research holds for their decisions and lives."

For more information about any item in this NewsScan:

- Reporters, call Michelle Person at 301-443-6245.
- Congressional staffers, call Mary Mayhew at 301-443-6071.

The National Institute on Drug Abuse (NIDA) is a component of the National Institutes of Health, U.S. Department of Health and Human Services. NIDA supports more than 85 percent of the world's research on the health aspects of drug abuse and addiction. The Institute carries out a large variety of programs to ensure the rapid dissemination of research information and its implementation in policy and practice. Fact sheets on the health effects of drugs of abuse and information on NIDA research and other activities can be found on the NIDA home page at <http://www.drugabuse.gov>.

(26)



The National Institute on Drug Abuse
is a component of the National Institutes of Health,
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES.

