

NewsScan

NIDA ADDICTION RESEARCH NEWS

Funding News

NIH Roadmap: Re-Engineering the Way Science Is Done

The National Institutes of Health (NIH) recently announced a series of initiatives known as the NIH Roadmap for Medical Research. The aim of the Roadmap is to transform the way medical research is conducted in the United States and to accelerate the pace of basic science and clinical research. All NIH Institutes are involved in supporting these activities.

The Roadmap is designed to chart major opportunities and gaps in biomedical research and to help scientists define objectives for conducting medical research in the 21st century and achieve new goals. The directors of NIH Institutes and Centers adopted a strategy that features a number of initiatives to be carried out by implementation groups under three main themes.

According to Dr. Nora D. Volkow, director of the National Institute on Drug Abuse (NIDA), a component of the NIH, drug abuse researchers can help lead this journey of scientific inquiry, which promises to transform U.S. biomedical research.

“NIDA scientists can contribute significantly to advancing the goals of this integrated vision,” she says. “Working together, we will deepen our understanding of biology, stimulate interdisciplinary research, and reshape the way clinical investigations are conducted. This will invigorate medical discovery and help improve public health from coast to coast.”

The three main themes of the NIH Roadmap are:

- **New Pathways to Discovery**—This theme addresses the need to advance our understanding of the complexity of biological systems. To capitalize fully on recent advancements in molecular and cell biology, researchers need broader access to new technologies, databases, and other resources.
- **Research Teams of the Future**—This theme outlines the need for scientists to move beyond the confines of their disciplines and explore new organizational models for team science. One of the primary goals is to formulate new ways of combining skills and disciplines in the biological and physical sciences. As part of this theme, NIH seeks to encourage scientists and institutions to test alternative models for conducting research that include high-risk research, interdisciplinary research, and public-private partnerships.
- **Re-Engineering the Clinical Enterprise**—This theme recognizes that clinical studies are becoming increasingly complex and that new research partnerships must be developed or created to include such diverse constituents as organized patient communities, community-based healthcare providers, and academic researchers. There is also a need to build integrated networks of academic centers linked to bodies of community-based physicians who care for large groups of patients and who wish to work with researchers to develop and test new interventions.

NIDA encourages its grantees to respond to NIH Roadmap requests for applications (RFAs) and program announcements (PAs). Links can be found on the NIDA Web site, www.drugabuse.gov.

One Roadmap research project recently announced to researchers is **Metabolomics Technology Development (RFA-RM-04-002)**. Metabolomics is a relatively new discipline that involves assessing or analyzing metabolites that arise from biological processes involving proteins. The advantage of metabolomics over proteomics research is that it allows direct observation of biochemical changes and drug treatment. This may help in the development of new drugs. It may also advance the understanding of how drugs work, interact, and cause side effects. Grants awarded through this initiative are expected to encourage technology

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developments that facilitate sample collection, extraction, recovery, and validation for specific classes of metabolites; sample detection, identification, quantification, and structure elucidation; and data management, reduction, and analysis.

Another Roadmap program developed to foster more innovations in science is the **NIH Director's Pioneer Award**, which has been established to identify and fund exceptionally creative and diligent investigators to allow them to develop and test far-ranging ideas. Candidates for the 5 to 10 awards will be interviewed from August to September, and final selections will be announced by the end of September. The awards will be in the amount of \$500,000 annually to cover the direct costs of conducting the research.

To learn more about the NIH Roadmap, go to www.drugabuse.gov/about/roadmap/index.html.

Speaking at the National Advisory Council on Drug Abuse in February, Dr. Volkow also identified a number of funding priorities specifically for NIDA, citing recent RFAs and PAs that focus on prevention and treatment of drug abuse and addiction. Topics include:

- Prevention research for the transition to adulthood;
- Novel approaches to phenotyping drug abuse;
- Behavioral and cognitive processes related to adolescent drug abuse;
- Developing animal models of adolescent drug abuse;
- Consequences of marijuana use on the developing brain; and
- Medications development for cannabis-related disorders.

NIDA also is funding opportunities for researchers interested in:

- Drug abuse aspects of HIV/AIDS and other infections—PA-04-007 (for more information, go to <http://grants.nih.gov/grants/guide/pa-files/PA-04-007.html>); and
- Research education grants in drug abuse and addiction—PAR-04-054 (for more information, go to <http://grants2.nih.gov/grants/guide/pa-files/PAR-04-054.html>).

In addition, in conjunction with other NIH Institutes, NIDA is supporting research projects to better understand the role of drug abuse and addiction in the face of co-occurring disorders. Relevant PAs include:

- Research on Rural Mental Health and Drug Abuse Disorders—PA-04-061 (see related article for additional information; for more information, go to <http://grants.nih.gov/grants/guide/pa-files/PA-04-061.html>); and
- HIV/AIDS, Severe Mental Illness, and Homelessness—PA-04-024 (for more information, go to <http://grants.nih.gov/grants/guide/pa-files/PA-04-024.html>).

In keeping with the NIH mandate to foster innovative or conceptually creative research, NIDA also invites applications for Cutting-Edge Basic Research Awards (CEBRA). These awards are specially designed to support high-risk and potentially high-impact research that is underrepresented or not included in the Institute's current research portfolio. More information about CEBRA can be found at <http://grants1.nih.gov/grants/guide/pa-files/PAR-03-017.html>.

To learn more about research funding opportunities from NIDA, go to www.drugabuse.gov.

Molecular Libraries Screening Centers Network (RFA-RM-04-017)

The Molecular Libraries and Imaging Initiative is part of the Roadmap theme "New Pathways to Discovery."

The primary goal of the Molecular Libraries Screening Centers Network (MLSCN) is to screen large numbers of compounds to identify small molecules that selectively interact with specific biological targets. They will be used to analyze physiologic processes, cellular phenomena, and disease mechanisms. The newly identified compounds will become new research tools, which have the potential to serve as chemical platforms that will launch new therapeutic agents.

The biological information uncovered through research funded under this initiative will help define molecules that can be used as biological probes. A database will be made available to the scientific community.

This request for applications (RFA) will commence the initial phase of the MLSCN as a pilot program that will support at least six centers. By the end of the 3-year funding period, each center will have developed sufficient capability to screen at least 100,000 compounds in 20 assays.

The letter-of-intent receipt date for this RFA is July 26, 2004. For more information about this RFA, go to <http://grants1.nih.gov/grants/guide/rfa-files/RFA-RM-04-017.html>.

Epidemiology of Drug Abuse (PA-04-100)

Epidemiologists are concerned with the incidence, distribution, and control of disease in a population. They also study factors that affect the progress of an illness. For drug abuse, which cannot be studied solely on the basis of genetics and biology, epidemiologists research the influence of social, cultural, and other environmental factors on their magnitude, impact, and distribution patterns among different populations. Information gained from epidemiological research can be applied to developing drug abuse prevention strategies, as well as evaluations of drug abuse services. It also can suggest new areas for basic and clinical investigations.

NIDA's epidemiological drug abuse research program oversees research projects that are involved with:

- Emerging and current trends in drug abuse;
- Social epidemiology of drug abuse;
- The role of genetics in drug abuse;
- Further understanding the relationships between co-occurring psychiatric disorders and drug abuse;
- How human biological development, especially during adolescence, impacts drug abuse;
- Parental drug abuse and its consequences on child development;
- Studying the social and behavioral consequences involving street drugs; and
- Identifying and understanding drug markets and behavior economics.

The major goal of this program announcement (PA) is to stimulate innovative investigations into these areas. For more information about this PA, go to <http://grants.nih.gov/grants/guide/pa-files/PA-04-100.html>.

Collaborative Clinical Trials in Drug Abuse (PAR-04-073)

The National Institute on Drug Abuse (NIDA) seeks to increase the collaboration of investigators at different sites to address critical issues in the treatment of substance-related disorders.

By allowing multiple sites to recruit, a larger sample that otherwise could not be recruited within a reasonable timeframe can be enrolled. This initiative seems ideally suited to foster the efficiency and creativity that can be obtained through investigator-initiated research and, at the same time, allows multiple investigators to coordinate a focus on a particular clinical issue relevant to drug abuse.

Examples of research projects relevant to this program announcement (PA) include:

- Large scale trials of drug treatments alone or in combination with behavioral therapies;
- Investigations involving neuroimaging studies assessing the efficacy of various therapies;
- Trials designed to draw conclusions about the impact of treatments associated with gender, race, ethnicity, sexual orientation, age, or other variables; and
- Clinical trials of other clinical issues in drug abuse, such as HIV/AIDS and other infectious diseases.

NIDA encourages inquiries regarding this PA and welcomes the opportunity to answer questions from potential applicants. Inquiries may fall into three areas: scientific/research, peer review, and financial or grants management. For more information about this PA, go to <http://grants.nih.gov/grants/guide/pa-files/PAR-04-073.html>.

Research on Rural Mental Health and Drug Abuse Disorders (PA-04-061)

Many people in the United States experience the burden of drug abuse and addiction, along with an accompanying mental health disorder. Achieving progress in preventing and reducing the toll of these disorders relies on overcoming such barriers as inadequate insurance coverage, limited availability of services, and stigma. In rural areas, the problem may be compounded by the existence of additional obstacles, such as lack of community resources, distance between residence and care site, poverty, geographic isolation, and cultural differences between healthcare providers and recipients.

Research evidence suggests that the prevalence and incidence of mental illness and drug abuse are similar for urban and rural populations. Thus, the National Institute on Drug Abuse (NIDA) and the National Institute of Mental Health (NIMH) call for additional research to assess and monitor the availability, accessibility, quality, and outcomes of mental health and drug abuse services in rural and frontier areas. Research topics that may be considered include:

- Analyzing how certain factors—stigma, perceived service availability, accessibility, affordability, communication issues, and cultural sensitivity of providers—influence perceived need and demand for care in rural settings;
- Incorporating risk screening and prevention counseling into routine clinical care in various treatment settings, and studying the feasibility, utilization, and effectiveness of these interventions for rural populations;
- Assessing the sociocultural factors that predict use of mental health and drug abuse services in rural areas, including the distribution of these factors across racial and ethnic groups;
- Analyzing initiatives to improve the quality and outcomes of care for persons with comorbid drug abuse and psychiatric disorders;
- Studying whether members of rural populations can be effectively diagnosed and treated via telemedicine, as well as the extent to which this technology could be used; and
- Investigating whether primary care providers are adequately trained to deliver culturally appropriate care to the increasing number of minority groups moving to rural areas, and what general healthcare providers can do to increase effective diagnosis and treatment to rural individuals with comorbid drug abuse and mental illnesses.

For more information about this program announcement (PA), go to <http://grants1.nih.gov/grants/guide/pa-files/PA-04-061.html>.

Psychopharmacology of Widely Available Psychoactive Natural Products (PA-04-084)

Although members of the American public frequently encounter a variety of plant-derived products that affect the mind, mood, or mental processes, scientific research into these products has been limited. These products range from conventional foods—such as certain spices and coffee—to dietary supplements and narcotic drugs. Because many such products are defined as “natural,” many people may assume they are safe. However, the short- and long-term effects of many of these compounds on the brain and other organ systems are not well known.

For the purposes of this program announcement (PA), psychoactive natural products are defined as fungus- or plant-derived products that are taken primarily for their effects—stimulant, depressant, or hallucinogenic—on the central nervous system.

Under this PA, the National Institute on Drug Abuse (NIDA), the National Institute of Mental Health (NIMH), and the Office of Dietary Supplements (ODS), National Institutes of Health, invite research grant applications that seek to expand current knowledge about the chemistry and toxicology related to acute and chronic exposure to psychoactive natural compounds, and effects of these substances on the mind and behavior.

Examples of appropriate research topics include:

- Elucidating the drug classifications and mechanisms of action of these compounds;
- Investigating the possible effects of these compounds on the cardiovascular and endocrine systems following acute and chronic exposure;
- Understanding the acute effects of psychoactive natural products on cognition, learning and memory, and motivation; and

- Exploring the physiologic, behavioral, and toxicologic effects of these substances on pregnant females and offspring.

For more information about this PA, go to <http://grants.nih.gov/grants/guide/pa-files/PA-04-084.html>.

Enhancing State Capacity To Foster Adoption of Science-Based Practices (RFA-DA-05-002)

State health agencies set policy and allocate public health resources. Thus, such entities have the potential to influence how science-based health services are adopted within diverse communities. However, state agencies often lack the resources to conduct research that supports their efforts to initiate, develop, implement, and sustain a continuous science-based practice improvement process.

This request for application (RFA) encourages state agencies to conduct research that increases their capacity to ensure that science-based drug abuse treatment and prevention services reach the people who need them, are widely adopted by diverse communities, and are effectively implemented by a range of educators and service providers. This research also should produce replicable and sustainable outcomes at reasonable cost.

Projects may include, but are not limited to:

- Identifying monitoring tools and systems for assessing local provider performance and adherence to treatment guidelines;
- Examining the effectiveness of research distribution strategies currently in use;
- Developing and evaluating integrated systems for managing state and local data on substance abuse delivery to determine how policies and practices affect the quality, outcomes, and costs of services; and
- Examining strategies for establishing and implementing a statewide, results-based, reimbursement system to promote access to, retention in, and outcomes of care.

The letter of intent receipt date for this RFA is July 17, 2004. To view additional information about this RFA, go to <http://grants.nih.gov/grants/guide/rfa-files/RFA-DA-05-002.html>.

Prescription Drug Abuse (PA-04-110)

In 2002, according to the Substance Abuse and Mental Health Services Administration (SAMHSA), more than 6 million Americans age 12 and older were currently using prescription drugs for nonmedical purposes. Prescription drugs that commonly are misused or abused include pain relievers, tranquilizers, sedatives, and stimulants. In addition, data from NIDA's Monitoring the Future Survey indicate that there has been an increasing trend in pain reliever abuse among young people since 1989. The 2003 Monitoring the Future Survey shows that 1.7 percent of 8th-graders, 3.6 percent of 10th-graders and 4.5 percent of 12th-graders used OxyContin without a doctor's orders; and Vicodin use was even higher—2.8 percent of 8th-graders, 7.2 percent of 10th-graders, and 10.5 percent of 12th-graders.

For these reasons, NIDA seeks to develop an integrated program of research that will help reduce prescription drug abuse while continuing to support physicians who appropriately prescribe medications for therapeutic use. To deal with the problem of prescription drug misuse and abuse, research is needed to understand the factors that contribute to it. Additionally, scientists need to characterize its adverse medical, behavioral, and social consequences; to develop effective prevention approaches; and to develop effective treatments.

Research projects funded under this program announcement (PA) include, but are not limited to:

- Identifying factors that influence temporal trends in prescription drug abuse, such as healthcare system changes and alterations in prescription practices;
- Evaluating the role of the Internet as a source of prescription drugs and as a source of information about these substances;
- Determining how prescription drug abuse differentially affects brain processes across adulthood, especially in the elderly;
- Developing and evaluating treatment approaches that maintain abstinence and prevent relapse to prescription drug abuse;

- Developing and testing age-appropriate, gender-sensitive, and culturally-relevant treatment approaches; and
- Creating and evaluating effective strategies for distributing science-based information to healthcare professionals on recognizing, preventing, and treating prescription drug abuse.

NIDA welcomes the opportunity to respond to inquiries about this PA. For additional information, go to <http://grants1.nih.gov/grants/guide/pa-files/PA-04-110.html>.

Upcoming Events

Great Lakes Blending Conference

The Great Lakes Blending Conference—Blending Clinical Practice and Research: Forging Partnerships in the Great Lakes States To Enhance Drug Addiction Treatment—will be held September 27–28, 2004 at the Marriott Renaissance in Detroit, Michigan. This conference will bring together clinicians and researchers to examine cutting-edge scientific findings about drug abuse and addiction and their applications to clinical practice. More details about the conference will be available soon on NIDA's Web site at www.drugabuse.gov.

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 other topics are available in English and Spanish. These fact sheets and further information on NIDA research and other activities can be found on the NIDA home page at <http://www.drugabuse.gov>.

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