

FY12 Priorities

Project Title: Unsolicited Investigator Initiated Renewals

Mechanism(s): R01, D43, P30, P50, R24, U01, U10, P01

Competing Renewal, New or Expansion: 100% Competing Renewal

% of Minority/International: M 35%, I 10%

Plan Objectives(s): 1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 2G, 5A, 5B, 5C, 5D, 6A, 6B, 6C, 6D, 6F, 6G, 6J, 7A, 7B, 8A, 8B, 8C

Narrative Justification:

NIDA supports a broad range of research on the drug abuse aspects of HIV/AIDS in diverse, drug using populations to reduce the acquisition and transmission of HIV associated with sharing injection paraphernalia and/or high risk sexual behavior, to improve HIV treatment including access and utilization of services, and to reduce the consequences of HIV/AIDS. Research on drug abuse treatment as a component of HIV prevention and studies to enhance adherence to drug abuse and AIDS treatment are also a significant component of NIDA's HIV/AIDS research. NIDA also supports research on the natural history, epidemiology, etiology and pathogenesis, prevention, and treatment of HIV/AIDS and AIDS-related co-infections (e.g., hepatitis B virus (HBV), hepatitis C virus (HCV), other sexually transmitted infections (STIs), and tuberculosis (TB)) and other comorbid conditions. Another research area supported by NIDA is basic research, including the use of animal models and in vitro systems to study the role of drugs of abuse in HIV/AIDS etiology and pathogenesis; NeuroAIDS, genetics (host and viral genetic factors), epigenetics, and proteomics are major areas of this program. Because HIV/AIDS associated with drug abuse knows no national boundaries, NIDA supports international research to reduce the intertwined epidemics of HIV/AIDS and drug abuse. NIDA also participates in collaborative efforts with other Institutes and Agencies in order to leverage resources and conduct complementary research.

FY 2012 Plan. This initiative is consistent with all the scientific objectives and emphasis areas in the NIH/OAR FY 2012 Trans-NIH Plan for HIV-Related Research with the exception of Emphasis Areas #3 and 4, Microbicides and Vaccines.

Project Title: Implementation Science Research

Mechanism(s): R01, P50, P01, U10

Competing Renewal, New or Expansion: New

% of Minority/International: M 35%, I 10%

Plan Objectives(s): 1A, 1B, 1C, 5A, 5B, 5C, 5D,

Narrative Justification:

Efficacious interventions developed to prevent or treat HIV/AIDS in a particular setting often yield disappointing results on scale-up in diverse settings. Another issue is how to choose between competing interventions. Implementation science research is the multidisciplinary field that addresses such issues. Implementation science research seeks to understand the etiology of gaps between expected results and observed outcomes. Implementation science studies the effectiveness and cost-effectiveness of interventions; its goal is the integration of research findings and evidence-based interventions into healthcare policy and practice and, hence, to improve the quality and effectiveness of prevention, treatment, health services and care. Implementation science research recognizes that the environment, economics, culture, gender, behavior, and social circumstances are all factors that may complicate adapting interventions from one setting or population to another. Because drug abuse is stigmatized and often dealt with punitively rather than from a public health perspective, implementation science research may be particularly useful in identifying barriers and testing possible solutions for HIV/AIDS interventions in drug using populations.

Implementation gaps in the U.S. and internationally that this initiative addresses include:

Needle and syringe programs (NSP)—NSP are an important component of HIV/AIDS comprehensive prevention for IDU. NSP have been used as platforms to provide a variety of services to IDUs (e.g. HIV testing, condom distribution, referral to drug abuse treatment) in addition to providing sterile syringes. But there has been no systematic implementation research on NSP as comprehensive HIV prevention and treatment for IDU. Provision of medical services for IDU such as HCV testing and STD screening have all been implemented to varying degrees in NSPs, but there have not been studies on how best to integrate services and to assure continuity of care. NSPs have developed as alternative health care systems for IDUs, but whether this is optimal or whether integration into existing health care would be more cost-efficient and/or more effective or whether integration of services for IDU into standard healthcare settings would reduce the stigma associated with IDU has not been studied. NSPs have used fixed sites and mobile vans to deliver services; a better understanding of how best to deploy NSP services in particular communities is needed. Community attitudes and laws affecting NSP often impact NSP implementation. Establishing a target level of syringe distribution coverage for a given site is dependent on the epidemiologic and behavioral characteristics of the particular drug using population. Important outcome measures would include expansion of coverage, retention of NSP users, referrals to drug abuse treatment or on-site delivery of medication assisted therapy, medical services provided and integration of services, provision of comprehensive prevention services for injection and sexual risk reduction, including education and counseling, condom distribution, etc., estimation of reduction in risk behaviors and/or HIV incidence.

ART as HIV prevention- Engaging and retaining drug users in care: Bringing drug users into care earlier in the course of HIV infection and retaining them in care are crucial to maximizing prevention opportunities, preserving the efficacy of first-line ART, and improving individual and population health outcomes. Examples of research topics include: 1) Testing of models to optimize coverage of care

services; 2) Comparing models of service provision and adherence support; 3) Delineating key issues that result in suboptimal clinical outcomes; 4) Identifying appropriate portals for HIV testing; and 5) Identifying social and structural barriers as well as individual-level behaviors to ART initiation and maintenance.

Opioid substitution therapy (OST) as HIV prevention—OST is unavailable or of limited availability in many settings. In the U.S., OST is limited or unavailable in criminal justice settings. In the U.S. physician adoption of buprenorphine/naloxone OST has been relatively slow due to regulatory, financial, and attitudinal barriers. Yet, because buprenorphine/naloxone can be prescribed by physicians and dispensed at community pharmacies as opposed to methadone, which usually requires daily visits to a specialized clinic, there are advantages in terms of patient acceptability. In addition, because a specialized dispensing clinic is not required, it may be easier to integrate buprenorphine/naloxone treatment with HIV care. Internationally, there are many countries with large numbers of IDUs and high HIV prevalence that have little or no OST. Implementation science research is needed on how best to expand OST for a given setting. The use of OST as a stand-alone intervention compared with integration of OST with ART and treatment for comorbid conditions is another major area for study by implementation scientists. It will be important to determine which programs are most effective in expanding OST coverage and the relationship between OST coverage and reductions in risk behavior. In addition, studies should evaluate whether OST leads to increased adherence to HAART and improved HIV treatment success.

FY 2012 Plan: This initiative is consistent with the FY12 Trans-NIH Plan for HIV-Related Research Natural History and Epidemiology (Objectives A, B, and C) by supporting studies on the uptake and adherence to frequent HIV testing and linkage to care, determinants of HIV acquisition among vulnerable populations, research on substance abuse treatment modalities as HIV prevention interventions, evaluating the impact of substance abuse treatment on the effectiveness and consequences of ART, and encouraging more HIV prevention research in at-risk marginalized and vulnerable populations. It supports Behavioral and Social Sciences (Objectives A, B, C, D) by supporting research substance use and sexual transmission, designing and testing interventions for vulnerable populations, studying risk and protective behaviors associated with HIV transmission and progression in specific social and cultural contexts, studying barriers to health care utilization, refining techniques for measuring social networks and for collection of reliable information on sexual and drug-use risk behaviors.

Project Title: Technology-driven Strategies to Improve Assessment and Adherence

Mechanism(s): R01, R34, R03

Competing Renewal, New or Expansion: Expansion

% of Minority/International: M 30%, I 5%

Plan Objectives(s): 5A, 5B, 5C, 5D, 6B, 6D

Narrative Justification:

Maintaining drug abuse treatment and highly active anti-retroviral therapy (HAART) are important to addressing HIV/AIDS among drug abusers. Relapse to active drug use is often associated with non-adherence or lapses in ART. This priority examines the feasibility of utilizing and disseminating technologically-driven indices of assessment and adherence (e.g., Ecological Momentary Assessment (EMA), Medication Event Monitoring System, cell phone and/or Digital Assistant Device among others) in the context of delivering treatments to individuals with substance abuse disorder and HIV. There is a growing literature on the use technologies in order to monitor adherence to HAART among HIV+

populations (although not typically including HIV+ active drug users). In addition, there is some emerging data that some of these technologies, such as EMA and electronic diary reports, can be used in the context of treatment for drug-abusing populations, specifically in the recording of real-time cue exposure, cravings, and mood in the hours before cocaine and/or heroin use. As such, the use of technological instrumentation that can assess/monitor behavior and adherence in “real time” offers an innovative approach to target the multiple treatment needs, including adherence to HIV treatment regimens, monitoring of antecedent targets to drug use and/or other HIV-risk behaviors of drug-abusing populations with HIV.

Given the high rates of HIV among active drug users, the high rates of nonadherence with treatment regimens for chronic illnesses (such as HIV) as well as the optimal levels of adherence necessary to maintain virological suppression and avoid the development of anti-retroviral drug resistance, there is a critical need to develop interventions that significantly enhance adherence to HIV treatment regimens and decrease HIV-risk behaviors (e.g., sharing needles). The development of several technological measures might offer promise to address the clinical needs of the underserved population of substance users with HIV.

The topics to be addressed by this initiative include:

1. How feasible is it to develop, utilize, implement, and/or disseminate these technologies among drug abusing populations with HIV? What potential barriers exist to adopting these approaches to this population and what resources/approaches are needed to overcome those barriers?
2. Which groups and approaches are the most likely candidates for efficacious use of these technologies? What subgroups of drug-abusing populations with HIV (e.g., prisoners leaving correction facilities and transitioning back to communities; those already receiving specific behavioral and/or other interventions (e.g., DOT)) are most suitable?
3. What secondary benefits and innovative applications (e.g., HIV prevention) may be developed for and as a result of adherence-related technologies?

FY 2012 Plan: This initiative is consistent with the NIH/OAR FY 2012 Trans-NIH Plan for HIV-Related Research for Behavioral and Social Science research (Objectives: A, B, C, and D) behavioral and social science research will be investigate the use of technology to encourage drug users to adhere to treatment intervention regimens, including adherence to HAART therapy and Therapeutics (Objective B and D)by supporting studies to improve adherence to ARV regimens and regimens to treat coinfections.

Project Title: HIV Prevention in Vulnerable Populations in the U.S.

Mechanism(s): R01, R21, R03, R34

Competing Renewal, New or Expansion: Expansion

% of Minority/International: M 80%

Plan Objectives(s): 1A, 1B, 1C, 5A, 5B, 5C, 5D

Roadmap Area (if applicable): Not Applicable

Narrative Justification:

As the US AIDS epidemic has evolved, there has been a shift toward increasingly disproportionate representation by ethnic/racial minorities, particularly African-Americans and Hispanic/Latinos in the number of AIDS cases and numbers of new infections. There has also been a resurgence of HIV cases among men who have sex with men (MSM), particularly those who are members of ethnic/racial

minority groups. The role of non-injection drug use, particularly use of stimulants and club drugs, in the fueling the epidemic has become more salient. Stimulant/club drug users tend to overlap with the emergent MSM groups. Drug use and/or drug using sexual partners are important components of the broad ethnic/racial minority epidemics. These populations are in need of better interventions for HIV prevention and treatment, with consideration of cultural and structural factors which may account for racial/ethnic disparities. While disparities have increased over time, it is apparent that there often are few racial/ethnic differences in sexual risk behavior. Some of the most vulnerable populations for HIV infection do not see themselves as being at risk. Sexual networking patterns may be significant contributors to the dissemination of HIV among particular ethnic/racial groups, particularly within defined geographic areas. It is important to consider both individual factors such as co-morbidities or differential distributions of genetic risk or protective factors and contextual and socioeconomic factors. Examples of research that would further this initiative include:

- Epidemiological research which considers factors such as substances of use, networking patterns, access to care & prevention, and cultural factors which may account for disparities in HIV acquisition between white and ethnic/racial minority populations.
 - Research on ethnic/racial disparities in HIV acquisition that address different distributions of co-occurring disorders (e.g., STIs), different distributions of genetic risk and protective factors and other biological variables which may contribute to these disparities.
 - Development and evaluation of interventions to reduce HIV risk among racial/ethnic minority MSM, which take into account factors such as substances of use, networking patterns, access to care & prevention, and cultural factors from epidemiological research which may account disparities in HIV acquisition.
 - Development and evaluation of interventions to reduce HIV risk among racial/ethnic minority women, which take into account factors such as substances of use, networking patterns, access to care & prevention, and cultural factors that may account disparities in HIV acquisition.
 - Development and evaluation of interventions to reduce HIV risk among drug using MSM, which take into account factors of how sexual risk behavior may be affected by substances of choice, levels of substance use and abuse, and relationships among sexual, social, and drug use networking.
 - Development and evaluation of interventions to increase HIV test uptake, linkage to care, and adherence to antiretroviral medications among ethnic/racial minorities, with particular attention to cultural and structural factors that may lead to delayed testing or late testing and impede antiretroviral use.
- 🕒 Develop interventions for urban drug using Native American populations that provide effective and efficient outreach as well as prevention intervention, HIV testing, and linkage to care and prevention services.

FY 2012 Plan: This initiative is consistent with the NIH/OAR FY 2012 Trans-NIH Plan for HIV-Related Research for Natural History and Epidemiology (Objective A) by characterizing risk factors in vulnerable populations, (Objective B) by evaluating factors influencing uptake and adherence to all steps of the testing and treatment process, and (Objective C) by ensuring that domestic epidemiological studies accurately represents populations at risk for HIV/AIDS. This initiative also supports Behavioral and Social Science (Objectives: A, B, C, and D) in developing, evaluating, and advancing prevention interventions (at both the individual and community level); conducting basic and behavioral research on factors influencing HIV risk behaviors and on the consequences of HIV disease; conducting treatment, health, and social services research for people infected and affected by HIV; and quantitative and qualitative research to enhance HIV prevention and care.

Project Title: Systems Biology, HIV/AIDS, and Substance Abuse

Mechanism(s): RPGs

Competing Renewal, New or Expansion: New

% of Minority/International: M 5%, I 2%

Plan Objectives(s): 2A, 2B, 2C, 2D, 2G, 5B, 6A, 6G

Narrative Justification:

The development of novel approaches for successful HIV/AIDS prevention and treatment strategies are significantly more complex with the added burden of substance use; as well as co-infections and co-morbidities that are prevalent in drug using populations. These complexities are difficult to address using traditional hypothesis-driven research approaches; as a result, substance use and related issues are rarely addressed in HIV/AIDS research. This initiative encourages investigation of the complex interface between HIV/AIDS and substance use by utilizing systems biology approaches, which are emerging as powerful ways to identify new and unanticipated paradigms in many areas of biology. In systems biology, no single model or hypothesis is tested; instead, large datasets (i.e. genome-wide, proteome-wide) are interrogated and integrated using computational and statistical methods to generate and test many putative hypotheses simultaneously. System-wide approaches have the potential to redefine HIV virus-host interactions in the context of substance abuse and perhaps lead to novel prevention and personalized therapeutic strategies. Examples of data types of interest include proteomic, protein interaction, metabolomic, pharmacological, behavioral, electrophysiological, imaging, neural connectivity, clinical, anatomical, gene variant, RNA interference, epigenomic, and gene expression data.

Topics to be addressed with this initiative include:

- What biomarkers and regulatory networks can be identified as altered by HIV infection and substance abuse particularly within the immune system and the brain?
- What factors are associated with individual differences in disease outcome or symptom severity with respect to HIV/AIDS and substance abuse, including associated coinfections or comorbidities?
- How are host and viral responses to antiretroviral treatment affected by substance abuse?
- Can non-human primate or murine models be used to better understand drug abuse-host-virus interactions?
- How does HIV infection affect neurocircuitry involved in risk behavior and responses to addictive substances, such as reward seeking and impulse control?
- How can new technological approaches be integrated with ongoing genetic, epidemiological or clinical studies to define new hypotheses and paradigms?
- What new therapeutic targets can be identified for prevention or treatment of HIV pathogenesis in the context of substance abuse?

FY 2012 Plan: This initiative is consistent with the NIH/OAR FY 2012 Trans-NIH Plan for HIV-Related Research for Etiology and Pathogenesis (Objectives: A, B, C, D, and G) by addressing the host and viral factors involved in the transmission, establishment, and progression of HIV disease, including neurological disease, in drug-using populations. This initiative also addresses drug abuse associated risk behavior in emphasis area Basic Behavioral and Social Science Research (objective 5B). Objectives 6A, development of HIV treatments, and 6G, development of AIDS-related neurologic disease therapeutics in emphasis area Therapeutics are also addressed.

Project Title: Exploring Epigenetic Regulatory Mechanisms in HIV/AIDS and Drug Abuse

Mechanism(s): RPGs

Competing Renewal, New or Expansion: Expansion

% of Minority/International: M 5%, I 2%

Plan Objectives(s): 2A, 2B, 2C, 2D, 2G

Narrative Justification:

Epigenetic changes (stable, long-term alterations in the transcriptional potential of a cell) may provide protection from or vulnerability to HIV-1 infection and disease progression, and drugs of abuse or a history of drug abuse may impact these mechanisms. Emerging evidence suggests that epigenetic mechanisms influence HIV-1 integration into the host genome, control of viral latency and reactivation, and immune responses and other host factors critical for HIV-1 infection and progression. In addition, recent reports show that drugs of abuse such as nicotine and cocaine alter gene expression in the brain via epigenetic mechanisms. It is unknown how epigenetic regulation of HIV-1 differs in various organ systems (e.g. lymph nodes, brain, or gut), different cell types, activated vs. resting cells, and over time during the course of disease progression. How drug abuse and coinfections may impact this regulation is also unknown. This initiative will include studies of histone modifications, DNA methylation, and non-coding RNAs (including microRNA) in human cells or animal models to enhance our understanding of HIV/AIDS and provide new strategies for treatment.

Topics under this initiative include:

- What host genes/factors are altered epigenetically by HIV infection and substance abuse in different cell populations and different organ systems?
- What epigenetic changes regulate HIV infection, integration, latency, or pathogenesis, and how does acute or chronic exposure to abused substances affect this regulation?
- How do drug abuse-induced epigenetic changes in brain impact HIV-associated neurological and neurobehavioral impairment?
- Can non-human primate or murine models be used to understand epigenetic factors regulating drug abuse-host-virus interactions?
- How can epigenetic studies be integrated with ongoing genetic, epidemiological or clinical studies to monitor long-term effects?
- Can new therapeutic approaches targeting epigenetic factors be useful in preventing HIV pathogenesis in the context of substance abuse?

FY 2012 Plan: This initiative is consistent with the NIH/OAR FY 2012 Trans-NIH Plan for HIV-Related Research for Etiology and Pathogenesis (Objectives: A, B, C, D, and G) by delineating the host and viral epigenetic mechanisms involved in the transmission, establishment, and progression of HIV disease, including neurological disease, in drug-using populations.

Project Title: Use of Incentives and Other Strategies to Improve HIV Testing, Adherence to Medications, and Retention in AIDS Treatment

Mechanism(s): R01, R21

Competing Renewal, New or Expansion: New and Expansion

Co-Funding: Not Applicable

% of Minority/International: M 40%, I 5%

Plan Objectives(s): 5A, 5B, 5C, 5D, 6B, 6D
Roadmap Area (if applicable): Not Applicable

Narrative Justification:

The use of motivational incentives, or “contingency management” as it is commonly called, is one of the most powerful interventions known to promote abstinence from drugs and to promote adherence to medications to treat drug abuse. Incentives have also been used to engage and retain drug users in drug abuse treatment. This initiative will study the use of motivational incentives as a component of the continuum of HIV prevention and treatment including HIV testing, engagement in HIV treatment, adherence to HIV treatment regimens, and retention in HIV care.

A large number of drug abusers are HIV positive due to the increased risk of HIV from drug use associated with drug injection and/or high risk sexual behavior. Many HIV positive individuals are unaware of their serostatus because they have not been recently tested for HIV. The use of incentives may encourage drug using individuals at high risk for HIV to be tested for HIV at more frequent intervals and to participate in risk reduction counseling. This will enable these individuals to initiate treatment earlier in the course of their HIV disease and to modify their behavior to reduce the risk of transmitting HIV to others.

Highly active antiretroviral therapy (HAART) is effective in decreasing viral load to undetectable levels, but people must adhere to their HAART medication in order for the medication to be optimally effective. Poor adherence affects the individual’s prognosis and may lead to the development viral resistance. Incentives may be a useful and cost effective means of improving HAART adherence in substance abusers. Although a handful of small randomized interventions trials have demonstrated promising success in increasing adherence to HIV medications through the use of behavioral interventions, such as contingency management and mDOT (modified Directly Observed Therapy), the feasibility and cost-effectiveness of scaling up such interventions is unclear. In addition, interventions must be sustainable over the long term. Specifically, tailoring and evaluating community-friendly interventions is critical, given the financial constraints faced by resource-limited community-based clinics and treatment centers. In addition to issues of poor adherence to HAART, drug abusers frequently drop out of AIDS treatment altogether. Strategies based on behavioral reinforcement may also be of value in retaining drug users in AIDS treatment and encouraging them to access related services.

The topics to be addressed by this initiative include:

- Assess what factors, information, and incentives would be necessary to motivate high-risk drug-using populations to understand the benefits of early detection of blood-borne viruses and to undergo voluntary counseling and testing.
- Assess whether the use of incentives to maintain subjects in drug abuse treatment enhances engagement in HIV testing, linkage to HIV care, and retention in care.
- Study how to effectively use incentives and other motivational factors to enhance HIV testing, entrance into HIV care, adherence to HAART and other treatment medication regimens, and retention in HIV treatment. Evaluate the subject characteristics (e.g., type and frequency of drug use), characteristics of the incentives program (e.g., individual or group contingency management; size and frequency of incentives), and other factors that influence effectiveness.
- Develop, implement and evaluate community-friendly interventions to promote: HIV testing, HIV treatment engagement, adherence to HAART and relevant HIV care, and retention in HIV treatment among substance abusing populations in resource-limited settings (e.g., community or clinic-based treatment centers).
- Develop strategies to maintain HAART adherence long term following cessation of mDOT or voucher incentive programs.

- Evaluate cost effectiveness of interventions across different populations and different schedules of reinforcement.

FY 2012 Plan: This initiative is consistent with the NIH/OAR FY 2012 Trans-NIH Plan for HIV-Related Research for Behavioral and Social Science research (Objectives: A, B, C, and D) and Therapeutics (Objective B and D) emphasis areas. Basic behavioral and social science research will be investigate the use of incentives to encourage drug users to access HIV testing and counseling services, return for follow-up diagnostic results, and enter and adhere to prevention and treatment intervention regimens, including adherence to HAART therapy. Studies will investigate adherence and self-management for ARV and coinfection treatment regimens.

Project Title: Pharmacotherapies for HIV/AIDS in Drug Abusing Populations

Mechanism(s): RPGs

Competing Renewal, New or Expansion: New and Expansion

% of Minority/International: M 35%, I 10%

Plan Objectives(s): 6A-6D, 6G, 6J

Narrative Justification:

The goal of this initiative is to encourage research on pharmacotherapies for HIV and co-occurring infections including HCV, TB and others in drug abusing/dependent populations. This initiative will solicit applications to conduct clinical and preclinical research that will evaluate: (1) the impact of currently available or in-development antiretroviral medications that could be used effectively in methadone or buprenorphine-maintained drug abusing populations; (2) HIV and other co-occurring infectious disease progression in drug abusing populations; (3) the efficacy of anti-viral medications in drug abusing populations; (4) the medical safety of concurrent administration of anti-infective and antiviral medications among drug addicts; (5) possible adverse interactions between anti-infective and antiretroviral medications in drug abusing population, and (6) develop drug delivery systems for both HIV infected and drug dependent patients. This FOA will focus on drug using vulnerable populations such as women, ethnic minorities, and those vulnerable for acquiring/transmitting HIV and other infection. NIDA also participates in collaborative efforts with other Institutes and Agencies in order to leverage resources and conduct complementary research.

FY 2012 Plan: This initiative is consistent emphasis area Therapeutics in the NIH/OAR FY 2012 Trans-NIH Plan for HIV-Related Research as it pertains to treatment of HIV in drug using populations

Project Title: Training, Infrastructure, and Capacity Building

Mechanism(s): RPGs, training

Competing Renewal, New or Expansion: new and Expansion

% of Minority/International: M 20%, I 7%

Plan Objectives(s): 7A, 7B

Narrative Justification:

INVEST Fellowship Program and Humphrey Fellowship Program: The INVEST program brings foreign postdoctoral fellows to the U.S. for one year of research training and also includes professional development activities and grant-writing guidance. NIDA has added additional slots to this program

dedicated to training investigators with an interest in HIV/AIDS research. This expansion of the INVEST program complements other efforts by NIDA to increase international research on HIV/AIDS. The Humphrey program is a partnership with the U.S. Department of State to support a unique training program for midcareer drug abuse professionals; some of NIDA's Humphrey fellows have an interest in HIV/AIDS. In addition, NIDA participates in the national Humphrey Fellowship seminar and has organized sessions focusing on HIV/AIDS and invited participation of fellows from Emory Humphrey Program, which has an HIV/AIDS concentration. Through contacts with NIDA staff, further interactions between foreign HIV/AIDS researchers and U.S. investigators have been facilitated.

IAS/NIDA Fellowships in HIV and Drug Abuse: This joint International AIDS Society/NIDA program was initiated in FY09 and provides support for 4 fellows at either the junior fellow level (18 months post-doctoral training) or the senior fellow level (eight months professional development) to receive training at leading institutes excelling in research in the HIV-related drug use field.

A-START: To facilitate the entry of newly independent and early career investigators into the area of AIDS research, NIDA has developed the AIDS-Science Track Award for Research Transition (A-START) mechanism. This program supports feasibility studies using the R03 mechanism and providing up to \$100,000 direct costs for two years to facilitate the entry of new investigators into drug abuse and HIV/AIDS research.

NIDA Director's Avant-Garde Award: In FY08, NIDA introduced the Avant-Garde award to encourage cutting edge, high-risk, high payoff HIV/AIDS research. It uses the DP1 mechanism; the same mechanism as the NIH Director's Pioneer award. This ongoing program selects 2-3 awardees each year.

Research Training: This program supports research efforts through institutional training research grants (T32), pre-doctoral (F31), post-doctoral (F32) mechanisms. NIDA also funds minority supplement at the pre-doctoral and post-doctoral level to train minority investigators in HIV/AIDS research. To increase the numbers of underrepresented minorities in research careers in drug abuse, including HIV/AIDS, NIDA supports a program of diversity supplements. The purpose of all of these programs is to help ensure that a diverse and highly trained workforce is available to assume leadership roles related to the Nation's biomedical and behavioral research agenda in the areas of substance abuse and HIV/AIDS.

FY 2012 Plan: This initiative is consistent with the NIH/OAR FY 2012 Trans-NIH Plan for HIV-Related Research for Training, Infrastructure, and Capacity Building (Objectives A and B) by supporting predoctoral, postdoctoral, and advanced research training across a broad range of AIDS-related disciplines. It is also consistent with the goal of establishing and maintaining the appropriate infrastructure needed to conduct HIV research domestically and internationally.