

FOR IMMEDIATE RELEASE

Monday, July 23, 2012
9 a.m. EDT

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Prevention of HIV spread focus of NIDA's 2012 Avant-Garde Awards

Innovative research will study how to prevent transmission among the newly infected and identify genetic influences in disease progression

The National Institute on Drug Abuse (NIDA), part of the National Institutes of Health, today announced the recipients of the 2012 Avant-Garde Award for HIV/AIDS Research. The three scientists, Drs. David Smith, Samuel Friedman and Jeremy Luban, will each receive \$500,000 per year for five years to support their research. NIDA's annual Avant-Garde award competition, now in its fifth year, is intended to stimulate high-impact research that may lead to groundbreaking opportunities for the prevention and treatment of HIV/AIDS in drug abusers.

Awardees are:

David Smith, M.D., University of California, San Diego School of Medicine

Project: Molecular epidemiology for HIV prevention for drug users and other risk groups

Dr. Smith's group will develop a novel system that integrates information regarding patient demographics, geographic location, drug use, and HIV viral strain in order to map patterns of new HIV infections as they occur in real time. A successful system would allow for the quick delivery of tailored prevention resources to affected communities based on their unique characteristics (e.g., injection drug use or methamphetamine use and sexual transmission). The ultimate goal is to stop HIV clusters from developing or expanding, particularly among substance using populations.



Dr. David Smith

“Identifying and targeting HIV transmission clusters will allow us to make the most of HIV prevention resources,” said Smith. “We believe this could be the key to ending HIV transmission in some of the most at-risk populations in San Diego and, in turn, other communities.”

Samuel Friedman, Ph.D., National Development and Research Institutes, New York City

Project: Preventing HIV transmission by recently-infected drug users
Dr. Friedman’s research team plans to identify people newly infected with HIV and link them to care, since the first few months of infection represent a period of high infectivity and risk behavior. Novel interventions that include community alerts and education within affected drug using and other social networks and venues, and efforts to prevent stigmatization of the newly-infected, will be developed and tested to prevent further spread within the community.



Dr. Samuel Friedman

“Unlike many other HIV prevention and treatment methods, this technique will follow the virus to where it is likely to be transmitted,” said Friedman. “We will start with drug users, but the network and community aspects of the project mean that we will also prevent transmissions among other high-risk persons if the infection chains lead us to them.”

Jeremy Luban, M.D., University of Massachusetts Medical School, Worcester

Project: Human genes that influence HIV-1 replication, pathogenesis, and immunity in intravenous drug users
Dr. Luban’s group plans to develop new methods for studying the ways in which human genes can influence whether an exposed person will become infected with HIV or, if infected, how the disease will progress. These studies will guide future strategies aimed at preventing and treating HIV among drug abusers.



Dr. Jeremy Luban

“Despite 30 years of AIDS research, there is still no experimental system for studying how genes actually function in humans to regulate HIV replication, pathogenesis, and immunity,” Luban said. “Now that the number of human genes suspected of influencing HIV is skyrocketing, the need for such technology has never been greater.”

“This year’s award recipients proposed especially exciting research aimed at reducing HIV transmission and progression,” said NIDA Director Nora D. Volkow, M.D. “We expect that this innovative research will provide new leads in the fight against HIV/AIDS in drug abusing populations.”

These awardees were among the many applicants whose proposals reflect diverse scientific disciplines and approaches to HIV/AIDS research. The Avant-Garde Awards are modeled after the NIH Pioneer Awards and are granted to scientists of exceptional creativity who propose high-impact research that could open new avenues for prevention and treatment of HIV/AIDS among drug abusers.

According to the most recent estimates provided by the [Centers for Disease Control and Prevention](#), approximately 1.2 million people in the United States live with HIV, with about 50,000 new cases diagnosed each year, an incidence rate that has held relatively steady since the

late 1990s. Drug abuse and its related behaviors, such as sharing drug injection equipment and/or engaging in risky sexual behavior while intoxicated, have been central to the spread of HIV/AIDS since the pandemic began 30 years ago. [NIDA's AIDS Research Program](#) supports a multidisciplinary portfolio that investigates the role of drug use and its related behaviors in the evolving dynamics of HIV/AIDS epidemiology, natural history, etiology, pathogenesis, treatment, and prevention.

For information about NIDA's AIDS Research Program, including the [Avant-Garde Award Program for HIV/AIDS Research](#) and the [International AIDS Society-NIDA Joint Fellowship Program](#), go to www.drugabuse.gov/AIDS.

Smith, Friedman and Luban are funded under grant numbers DA034978, DA034989, and DA034990.

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The National Institute on Drug Abuse is a component of the National Institutes of Health, U.S. Department of Health and Human Services. NIDA supports most of the world's research on the health aspects of drug abuse and addiction. The Institute carries out a large variety of programs to inform policy and improve 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 www.drugabuse.gov, which is now compatible with your smartphone, iPad or tablet. To order publications in English or Spanish, call NIDA's DrugPubs research dissemination center at 1-877-NIDA-NIH or 240-645-0228 (TDD) or fax or email requests to 240-645-0227 or drugpubs@nida.nih.gov. Online ordering is available at <http://drugpubs.drugabuse.gov>. NIDA's media guide can be found at <http://drugabuse.gov/mediaguide/>, and its new easy-to-read website can be found at www.easyread.drugabuse.gov.

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