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## **Building Mini-Brains to Study Disorders Caused by HIV and Meth Use**

### **UC San Diego scientist wins \$2.5 million award to create stem cell-derived models**

A University of California, San Diego School of Medicine project involving the creation of miniature models of the human brain – developed with stem cells – to study neurological disorders caused by HIV and methamphetamine use has been named one of five recipients of the 2015 Avant-Garde Award for HIV/AIDS Research from the National Institute on Drug Abuse (NIDA).

The project, headed by Tariq M. Rana, PhD, professor of pediatrics, will receive \$500,000 per year for five years.

“The human cerebral cortex has evolved strikingly compared to those of other species, and no animal model accurately captures human-specific brain functions,” said Rana. “The creation of mini-brains, or organoids, will permit, for the first time, study of the toxic effects of addiction and HIV on the human brain in a dish. This offers us the exciting opportunity to design patient-specific model systems, which could potentially revolutionize drug discovery and precision medicine for central nervous system disorders.”

The Avant-Garde Awards are granted to scientists who propose high-impact research that could open new avenues for prevention and treatment of HIV/AIDS among drug abusers. The term “avant-garde” is used to describe highly innovative approaches that have the potential to be transformative.

“Despite the success of combined antiretroviral therapies, HIV remains a chronic disease with a host of debilitating side effects that are exacerbated in those suffering from substance use disorders,” said NIDA director Nora D. Volkow, MD. “These scientists have proposed creative approaches that could transform the way we think about HIV/AIDS research, and could lead to the development of exciting new tools and strategies to prevent infections and improve the lives of substance abusers infected with HIV.”

The other 2015 recipients are:

- Don C. Des Jarlais, PhD, Mount Sinai Beth Israel
- Eli Gilboa, PhD, University of Miami School of Medicine
- Nichole Klatt, PhD, University of Washington, Seattle
- Alan D. Levine, PhD, Case Western Reserve University

For more information about the Avant-Garde Award Program and 2015 recipients, visit [drugabuse.gov/about-nida](http://drugabuse.gov/about-nida)

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